An Address

ON THE

DIAGNOSIS IN STATES OF DEPRESSION.*

BY

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My subject—diagnosis in states of depression—has been selected on account of the frequency with which melancholy in its various forms occurs in medical practice.

Mental depression is so widespread and is due to such multifarious causes that any discussion of the subject, if not strictly limited in scope, would result in a treatise dealing with humanity in all its relations—in fact, a new and enlarged edition of Robert Burton's *Anatomy of Melancholy*.

The principal feature of the states of depression which I propose to consider is a mental anguish or pain out of proportion to any reasonable cause, and I necessarily exclude distress of mind arising in the ordinary course of human affairs. The natural consequences of bereavement or misfortune, the agony of remorse, the "pangs of despised love," are outside my subject. Depression, moreover, so often attends bodily diseases that it is necessary to confine attention to cases exhibiting mental pain as the prominent or cardinal symptom.

When severe, mental depression is perhaps the most distressing of all human afflictions. Not only may the anguish be fully as great as if the painful ideas and fears were completely justified, but in addition there is not infrequently an inarticulate nameless agony independent of any delusions that may have developed. As Dr. Savage has aptly said, the delusions crystallize out of a saturated solution of misery.

An attempt to discuss the diagnosis of mental disorders necessarily raises the question of their classification, and it must be admitted that we cannot satisfactorily differentiate the various forms of insanity. Pathology does not help in the great majority of cases, and we are unable to speak of mental diseases with the same confidence that we speak of bodily diseases. Even when the clinical picture is sufficiently clear and distinct, we not rarely discover that the symptoms observed may be due to widely different causes; and on the other hand, physical conditions apparently identical may produce mental disturbances by no means uniform in character.

A common illustration of this variability is the effect of alcohol in different subjects: in one the mental consequences of indulgence are exhilaration and talkativeness; in another dullness and stupidity; in a third unreasoning impulsiveness.

Poisons developed within the body have likewise diverse effects; the poison of general paralysis, for instance, produces in one person the characteristic delusions of grandeur, in another depression with painful hypochondriacal ideas. Similarly, influenza and other fevers, when followed by mental disorder, give no clearly defined train of symptoms, and the insanity dependent upon childbirth may exhibit either excitement, depression, or confusion.

It may, therefore, be contended that the forms of mental disorder which we describe are not diseases at all, but they merely indicate the various ways in which the mind reacts when the body is exposed to stress.

In making a diagnosis most of us arrive at a conclusion by a process of exclusion. The conditions that may produce the symptoms are considered one by one; the unlikely ones are successively eliminated until that disease which most nearly fulfils the requirements is reached I therefore enumerate the more common disorders which may lead to mental depression, namely: alcoholism, general paralysis of the insane, psychasthenic states, dementia praecox, and melancholia, divided into four groups—confusional, inhibitory, intrinsic, involutional.

As our means of classification is imperfect, we find there are a number of cases which are not readily allocated. These fall into two classes: (1) Those due to recognized diseases which need not be described separately—for example, myxoedema, Graves's disease, epilepsy, diabetes, acute suppuration, etc.; (2) the peculiar and irregular cases for which no place can be found.

The 200 cases which have been reviewed for the purpose of this paper are consecutive cases observed between the years 1898–1908. Patients seen in consultation are included with those that have been placed under care at the Retreat. Of these 200 cases, 9 per cent. were unclassified for the reasons stated.

ALCOHOLISM AND DRUG HABIT.

In the great majority of cases of insanity due to intemperance or drug addiction the history will be sufficiently clear to leave no doubt as to the nature of the disorder.

It is not, therefore, necessary to follow up this subject further than to say that some of the patients are very depressed, many of them have delusions of suspicion, accompanied by hallucinations of hearing. In many cases there is a tendency to suicidal impulses.

In the absence of any history it is, however, frequently impossible to distinguish the insanity due to alcohol from other forms of mental disturbance.

GENERAL PARALYSIS OF THE INSANE.

The next group illustrates forcibly the dictum which my old chief at St. Bartholomew's, Dr. James Andrew, used to impress upon us: "Never make a diagnosis until you have completed your examination."

The following case will serve as an example:

A brick manufacturer, aged 38, was sent under care with the following history: His father and one brother had been intemperate, but no other evidence of hereditary weakness could be elicited. He was a bachelor and successful in business. There had been no previous attack. His mother stated that he had been depressed and unable to do his work for some three months; six weeks previously he had barricaded himself in a granary and laid himself down to die. He had attempted his life in several ways, tried to cut his throat and to hang himself.

The medical certificate states: "He is in a state of intense depression; his life is ruined; there is no hope for him; he is too wicked to live, and he has brought himself to this by his evil deeds; he must go to the workhouse as he possesses no money, and so forth."

So far, the history and the symptoms do not suffice to distinguish this case from an ordinary one of melancholia, and if the nervous system had not been examined, in all probability a favourable prognosis might have been given. But a routine examination disclosed that, although equal in size, the pupils were not quite circular in outline; they reacted to accommodation, but not to light; the tongue was tremulous; the knee-jerks were delayed and uncertain, and only with difficulty elicited, and the plantar reflex was slight. These symptoms indicated some tabetic condition, and there was little difficulty in concluding that the case was one of general paralysis.

Just as the occurrence of a fit for the first time at about 40 years of age is of grave omen, so is an attack of depression appearing without obvious cause at the prime of life. Melancholia usually begins in early life, or at the climacteric, unless it be due to some toxic condition or special disturbance.

Although the mental symptoms in general paralysis may be of almost any kind, which is to be expected in a disease accompanied by diffuse cortical degeneration, it is usually possible to distinguish the depression from that occurring in other conditions. In general paralysis we expect some sign of mental enfeeblement. In most cases of melancholia we find little disturbance of the general intelligence, but in the graver condition there is much greater mental reduction. Thus, in the case quoted, the patient said he had never had a happy day in his life, that he was dying, and had only a few days to live, although his general health appeared good.

Modern clinical pathology now enables a diagnosis to be made with some approach to certainty. The Wassermann reaction is found to give a positive result in 90 per cent. of cases, and the cytological examination of the cerebro-spinal fluid also gives valuable assistance in the

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diagnosis of this disease and of tabes dorsalis. Modern research seems to have finally established the essential unity of tabes and general paralysis.

If we can be sure that the Wassermann reaction invariably indicates antecedent syphilis, the evidence strongly supports the proposition, "No syphilis, no general paralysis."

Dementia Praecox.

The next group of cases are included under the term "dementia praecox." As Kraepelin's conception of this symptom-complex has greatly modified the classification of mental diseases, a few words in explanation may be permitted.

A generation ago it was commonly taught that any severe attack of mental disease, whether of depression or excitement, was liable to end in permanent mental enfeeblement, and a large proportion of the unrecovered patients in our asylums were consequently looked upon as cases of secondary dementia. I well remember this term giving me some trouble, as I could not find from the histories of many of these patients that they ever had suffered from acute mental disorder. It did not seem satisfactory to assume that there had been such an attack, in the same way as we are apt to assume a patient has had scarlet fever when we find peeling.

The new conception throws light upon this difficulty by the suggestion that the greater number of these secondary dements are in reality in the terminal stage of a definite mental disorder, which can generally be recognized early in its course, and which is entirely different in its symptomatology from typical cases of mania and melancholia.

Although some English authorities hesitate to accept Kraepelin's far-reaching generalizations in relation to dementia praecox, I have myself no doubt as to the great value of his conception, and consider it makes a great advance in psychiatry.

I will try in a few words to give the leading features of this disorder, although I am aware verbal descriptions will very imperfectly create the clinical picture.

In the first place we find the mental powers are unequally attacked, and as a rule in the early stages there is no lack of understanding, no failure of perception, no loss of memory. The patient, therefore, grasps what is said, does not mistake his surroundings, remembers what has happened. But in a strange unaccountable way he loses interest in the affairs of life, does not seem to care what happens, and is irresponsive and apathetic. This emotional indifference is one of the most constant symptoms. The claims of the family are unheeded, he no longer cares for his old pursuits, nor does ambition or a sense of duty spur him to effort, even the passion of love moves him not.

The gravity of the case becomes evident when the conduct is affected. Strange impulsive actions are apt to appear, for example, uncalled-for laughter, senseless weeping, grimaces, strange postures or antics, and in many cases there is sudden, unexplained refusal of food, or obstinate disinclination to speak, and perhaps general resistiveness. Sometimes a sudden suicidal impulse startles the relatives, and the gravity of the case is recognized.

The peculiar feature of these outward signs of a disordered mind is the inability of the patient to explain his conduct. Careful inquiry will discover no motive, or at best a totally inadequate one. In most varieties of insanity strange actions are the logical consequences of false premisses; for example, a man shoots another because he believes his own life to be in danger, or he commits suicide because he fears an exposure of his guilt.

In dementia praecox we may fail to elicit any reasonable train of thought, the action appears to be purposeless.

Similarly the ideas of the patient are bizarre, and there may be grotesque delusions. Thus, a medical student without the slightest reason wired to his mother to say his uncle was dead; an intelligent young lady told me she had been talking to the "Holy Viper," but could not say what this was; a youth, by no means uneducated, said he had air in his veins, and that he wanted "serum injected in order to make the ventricles go round." In the early stages hallucinations are common, but neither these nor the delusions are persistent, and as the disease advances they generally disappear.

Dementia praecox implies a dissociation of the mental faculties: the powers of perception are frequently not affected until late in the disease, thinking and judgement are affected early, and actions may be senseless and automatic. A dulling of the emotions is one of the earliest and most constant symptoms.

In the majority of cases there is little real depression, but as in some emotional storms occur, it is therefore easy to confuse this disorder with other states of depression. Kraepelin[1] says, "Somewhat more rarely the commencement of the disease is characterized by a well-marked state of depression. The patient becomes dejected, dispirited, anxious, mistrustful, is home-sick, stares into vacancy, and indulges in thoughts of death and may make a sudden attempt at suicide in a peculiar manner. . . . As a rule there is a certain mistrust of those about them, and a feeling of being observed, slighted, badly treated and made fun of. With all this, the apathy and lack of true emotion with which the morbid ideas are expressed and defended is most striking."

In the cases of dementia praecox in which there is marked periodicity there may be difficulty in distinguishing it from manic-depressive insanity, but in the latter disorder signs of dementia are long delayed, there is decided emotional disturbance, and rarely the indifference and dullness found in the former.

In certain cases, however, it is necessary to defer making a diagnosis until some of the more characteristic symptoms have appeared.

M. A. J. until 24 was quiet, shy, reserved, but possessed of average ability. Her family history was bad, her parents were first cousins, and a brother had been insane.

After a stupid love affair she became depressed, refused food, sat for hours weeping, and she would not get up in the mornings, and there was some fear of self-injury. Under advice she went from home and improved, but a few months later the depression returned. On one occasion she said she was afraid to sleep alone because her will was so weak. One day she complained of sore throat and it was noticed that her mouth was black; it was subsequently ascertained that she had drunk some marking ink.

Four days later she threw herself from her bedroom window and fell 30 ft. and fractured both femurs. In the weeks of anxiety which followed she had a fixed idea to end her life, and she said it must come sooner or later; she had sinned and could never be forgiven, and it was no use to try to live a Christian life. So far the case resembles melancholia, but a month or two later extraordinary delusions appeared, and she stated that she must marry the son of the matron in the nursing home, a boy of 5½, and that she would like to go to school with him, and she said she was sure her mother would approve if asked. At the present time these ideas appear to have vanished, but she does not repudiate them with any degree of emphasis. She remembers the accident and says she was not depressed at the time, and she did not intend to kill herself. She can give no reason for throwing herself out of the window, except that she saw no other course of action and that "it would save time." She seems quite unconcerned at all the anxiety she has given her relatives. In spite of this she can write an intelligent and descriptive letter.

This case illustrates well the selective nature of the mental deterioration, the grotesque delusions, the impulsive tendencies, and the emotional indifference which characterize dementia praecox.

Psychasthenic States.

In the next group of cases, the depression is secondary to conscious mental disability. The patient, harassed by obsessions or haunting doubts, finds life difficult. In these cases the depression is perhaps not the cardinal symptom, but as such patients are frequently very unhappy and complain of suicidal impulses, they demand consideration.

Although psychasthenic patients often say that life is not worth living and talk of suicide, they rarely make any serious attempt. In only two instances have I known such patients take their own lives. In one, the patient was persistently worried by obscene thoughts which distressed him beyond endurance; in the other case, severe pains of apparently hypochondriacal nature had lasted for years, the best advice gave no relief and suicide was deliberately committed.

Cases of psychasthenia with depression are very common. Those which concern our present inquiry may present obsessional impulses to kill, to commit suicide; fears of disease and of going mad; or doubts and hesitations which interfere with the daily duties. In almost all of these there is little difficulty in diagnosis.

In not a few patients the thought suddenly springs into the mind that they are becoming insane, which almost reaches a delusion that incurable madness is their certain lot. The imperative idea cannot be got rid of: they cannot sleep, and, haunted by this, they work themselves into a state of terror. It is usually possible to satisfy oneself that any depression which is present depends upon and is secondary to the morbid intrusive thought. Sometimes a patient can be reassured at a single interview, especially when the underlying cause of the fear can be elicited.

It would lead me too far from my subject to discuss Freud's hypothesis of the causation of psychasthenic states. Suffice it to say that my experience confirms his views of the importance of the sexual element. The physician will in not a few cases succeed in clearing up difficulties arising from past experiences of this kind and so remove a chronic source of mental irritation, with the result that the patient is permanently relieved and the obsessions and the imperative ideas disappear. The following case will serve to illustrate this:

The patient was an active, intelligent man 25 years of age, with a fairly good family history. At school and for some time after there had been masturbation, but none recently. He had been worried over an engagement which had to be broken off. Being depressed, he took a long holiday and was no better. His general health was good. For some time he had been haunted with the idea that he might commit suicide; he was much distressed at this, and was sure he was going insane. The thought constantly came into his mind, "it would be better if he were dead," but he did not at all want to die. He never made any attempt to injure himself.

The diagnosis was not difficult as it was clear there was no weight of depression; he could brighten up on occasion, could do his work well, and the central difficulty was the recurring imperative suicidal thought. It was also extremely probable that these were in turn dependent upon the memories of sexual irregularities.

The case did well. A plain talk, accompanied by advice in the use of spare time and the pursuit of some hobby, seemed to start him on better lines; the morbid ideas quickly disappeared, and he recovered his peace of mind, although in all probability a constitutional psychasthenic state remains.

The following case was more serious, and required asylum care:

A solicitor's clerk, aged 32, presented the following history: The first attack of mental disturbance was ten years ago, and the second three years since. Both attacks closely resembled the present one. Recovery was stated to have been complete. The patient was a temperate, hard-working man, but for fully twenty-five years he had had a peculiar dislike to dogs. This idiosyncrasy was always worse when he was somewhat depressed. There was no evidence of inherited predisposition. The present attack began six weeks before admission, and no definite cause could be ascertained. The certificates stated he had great depression of spirits and an insane dread of cutting his throat and fear of being left alone. His wife told Dr. Barrs, who signed the second certificate, that her husband had homicidal impulses to murder his children, and on one occasion she arrived just in time to prevent him doing so.

On admission he was found to be thin and worn, but beyond a somewhat high palate no sign of physical disability could be discovered. He said he had hitherto successfully resisted the impulse to injure himself and his children, but on certain occasions he had only restrained himself with great difficulty. He gave the impression that there had been serious risk in that direction. He was very depressed and miserable, and did not feel safe. The institution proved a real asylum for him, and he obtained the needful rest and protection.

He steadily gained weight, his confidence in himself slowly returned, and in three months he was discharged recovered. The patient remained well for a considerable time, but he has not been heard of recently.

In this case also the patient did not wish to die, and certainly begged to be restrained from injuring his children. The obsessions were clearly the cause of the depression. It would have been an interesting case for Freud's psycho-analysis, as in all probability the cause of the strange dislike of dogs could have been discovered and the chance of a future relapse greatly reduced.

Unfortunately this method of investigation was not generally known when this patient was under care.

MELANCHOLIA.

We have now reached the most difficult part of our subject. Almost every author subdivides melancholic states differently, and the want of unanimity is in itself evidence that the data for classification are insecure.

Kraepelin has thrown considerable light upon the affective psychoses. He divides them into two divisions: a large one, manic-depressive insanity, and a much smaller one, to which he would restrict the term "melancholia." The latter he considers exclusively a disorder of declining years, and I have applied to it the term "involutional."

Manic-depressive insanity is virtually an extension of the older term "*folie circulaire*," and Kraepelin asserts that single attacks of mania, or melancholia, are, in the vast majority of cases, imperfect cases of the same disorder. The tendency to relapse that distinguishes those maladies apart from any definite periodicity strongly confirms this view.

A man whom I knew had eight attacks of mania, each following almost identical lines, exhibiting the same delusions and strange habits in the same order in the recurring attacks. The case was typical of recurrent mania. But the ninth attack was altogether different. He was silent, depressed, apathetic, he refused food and had to be forcibly fed. Another patient, a lady, had many characteristic maniacal attacks, but once when she relapsed she became depressed and resistive; instead of being jocular and hilarious she was irritable, morose, and obstinate.

Cases such as these seem clearly to indicate that there is something common to both mania and melancholia in spite of their outward dissimilarity.

The essential unity of dejection and elation is, however, no modern notion. The word "melancholy" was used to describe both states. I trust I may be excused in quoting a few stanzas showing how Burton seemed to have known all about this.[2] They come from the preface to his book.

Methinks I hear, methinks I see,
Sweet music, wondrous melody,
Towns, palaces, and cities fine;
Here now, then there; the world is mine.
Rare beauties, gallant ladies shine,
Whate'er is lovely or divine.
All other joys to this are folly,
None so sweet as melancholy.

Methinks I hear, methinks I see
Ghosts, goblins, fiends; my fantasy
Presents a thousand ugly shapes,
Headless bears, black men, and apes,
Doleful outcries, and fearful sights,
My sad and dismal soul affrights.
All my griefs to this are jolly,
None so damn'd as melancholy.

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I'll not change life with any King,
I ravisht am: can the world bring
More joy, than still to laugh and smile,
In pleasant toys time to beguile?
Do not, O do not trouble me,
So sweet content I feel and see.
All my joys to this are folly
None so divine as melancholy.

I'll change my state with any wretch,
Thou canst from gaol or dunghill fetch;
My pain's past cure, another hell,
I may not in this torment dwell!
Now desperate I hate my life,
Send me a halter or a knife;
All my griefs to this are jolly
Naught so damn'd as melancholy.

There is, however, ground for the opinion that many patients suffering from depression are not rightly included in the group of manic-depressives. Tanzi,[3] Bianchi,[4] Lugaro,[5] all incline to the opinion that there is a melancholia apart from Kraepelin's syndrome. Dr. Lewis Bruce[6] also describes an acute and an excited melancholia separately from manic-depressive insanity. He presents much evidence to show that in the group called by him "acute melancholia" there is a metabolic toxaemia, and in that called "excited melancholia" there is a bacterial toxaemia, accompanied by hyperleucocytosis, the presence of agglutinins in the serum, and a deficient excretion of chlorides. Dr. Colin McDowall[7] has also done valuable work upon the same lines, and shows that in "melancholia with excitement" there is a distinct increase of leucocytes in the blood, especially in the early stages of the disorder.

As so many names are now in use—agitated, resistive, simple, delusional, acute, stuporose, pure, hypochondriacal—all varieties of melancholia, it may seem presumptuous in me to suggest fresh ones.

I have ventured to do so, nevertheless, because it seems to me we are justified in going a step further in the

differentiation of melancholic states. The varieties I suggest are:

1. *Confusional*, constituting a part of the syndrome, acute confusional insanity
2. *Inhibitory*, marked by thought hindrance, a part of manic-depressive insanity.
3. *Intrinsic*, with acute misery and without either confusion or hindrance to thought.
4. *Involutional*, generally marked by apprehensiveness and anxiety, melancholia in Kraepelin's restricted sense.

THE CONFUSIONAL GROUP.

In this group I have placed those cases of acute confusional insanity in which depression is a prominent feature. Many of these cases were formerly termed "acute melancholia," just as the exalted and excited confusional patients were described under the head of "acute mania."

Acute confusional insanity, sometimes called in Germany and in America, "amentia," is a fairly well-defined disorder, and is distinguished by confusion and disorientation—a failure to recognize surroundings, vivid, fleeting hallucinations, and an inability to recollect the incidents of the illness after recovery. Signs of digestive disturbance are common; there is often refusal of food and deficiency of the gastric secretions. Sometimes there is a rise of temperature. Sleeplessness and restlessness are usually present. At the outset of the attack there is a marked increase of leucocytes in the blood.

Inherited predisposition is not so important a factor in causation as in other forms of insanity. Frequently some definite bodily illness appears to be the cause of the attack. In women, a considerable number of cases are dependent upon childbirth, and Dr. Menzies[8] has shown that 65 per cent. of the cases of puerperal insanity are melancholic in type.

I have found these confusional cases some of the most satisfactory I have had. The disorder is so obvious that relatives realize its gravity at once; consequently effective treatment is adopted early, and the recovery rate is high. Out of 17 cases only 3 failed to recover, and of these one died of phthisis, another improved but relapsed, and the third was lost sight of.

Dr. Colin McDowall[9] considers the leucocyte count of considerable assistance in prognosis; if the percentage keeps moderately high there is always hope of recovery.

In some few cases there may be difficulty in distinguishing this disorder from those cases of dementia praecox which begin acutely. In the course of a few weeks the nature of the case will probably become clear. It is rare for patients with dementia praecox to be confused; they usually understand their surroundings; whilst in acute confusional insanity there is evidence of some degree of disorientation.

We are, I believe, justified in the opinion that when these confusional cases recover there is comparatively little danger of relapse. We may further consider it an acquired disease, not specially dependent upon inherited weakness, and not likely to be transmitted to children.

A. B., aged 29, had been confined two months before admission of her first child; parturition severe, no febrile disturbance; family history good. The past history disclosed nothing noteworthy. Five days after the birth of the child she became depressed, confused, suicidal. It was stated in the certificates that she wanted to put her head in a bucket of water, that her memory was bad, and that there was an absence of intelligent ideas. On admission she was quiet but depressed. She appeared confused, spoke only in whispers, and then only a word or two, not completing a sentence. During the first week the notes state she is restless, thinks she has been in York a month. Says things are fighting and going round in her head. Leucocytes, 23,000; red-cells, under 4,000,000. She takes food badly, is tube fed; impulsively springs out of bed, does not seem to feel prick of a pin; there is marked dermatographia. The report a week after admission says she is in a confused state and cannot properly understand her surroundings and is unable to reply to questions. She cannot express her ideas. She does not appear to know the names of those about her. She is pale, otherwise in good health, and no evidence of visceral or uterine disease.

Six months later: Does not make progress, childish in talk, apt to be depressed, says she wishes she were dead. Menstruation resumed. Is destructive at times, suddenly ripping her clothes. She then slowly began to improve, but was liable to be depressed; complained of pain in head, feelings like as though little red men were walking about in her head.

She left on trial twelve months after the onset of the symptoms, and was discharged recovered. I recently heard that she keeps well.

C. D., aged 28, officer's wife. She was confined three months before admission, and afterwards had an abscess in the breast. The family history is not good; she comes of an excitable family, and one sister had an attack of insanity lasting a year. The certificates bring out the depressed mental tone. She stated she was too wicked to live, is doomed to a horrible death, she has implored her husband to kill her to save her from it, and that she has gone over to the devil.

On admission was flushed, agitated, confused, dishevelled in appearance. She refused food; pulse 120; a presystolic cardiac murmur and thrill were detected; there was albuminuria, but no rise of temperature.

Next day it was reported she constantly hears "voices," especially her husband's voice at night. She was resistive and troublesome about food, and practises bad habits. A week later the "voices" continue, and she is a good deal troubled with the many things she hears. She does not know where she is, and took the ward sister for a certain major. (It transpired later that there was a certain facial resemblance between them.) She has an idea that things are distorted, much bigger than they ought to be. She was also in doubt as to her own identity. She was nursed in bed. A month after admission she had hallucinations of smell. An examination of the blood showed some increase in leucocytes, but no other abnormality.

Five months after admission she began to convalesce. The albuminuria cleared up, and, what was more remarkable, the cardiac murmur disappeared, the thrill vanished, and the pulse-rate became 72 before she left.

In this last case there was clearly some septic condition, which appeared to have caused the kidney disease, the heart trouble, and the mental disturbance. It is possible this was due to the infection which produced the mammary abscess.

THE INHIBITORY GROUP.

This form of melancholia has not, I believe, been described under this name, and as a rule authors do not attempt to separate it from the next group to be mentioned. The clinical picture is, however, a familiar one. The leading characteristic is a general slowing of mental processes, to which the Germans give the expressive name of *Denkhemmung*, or thought-hindrance. These cases would be included by Kraepelin in manic-depressive insanity.

A patient suffering from the inhibitory form of depression looks at first sight depressed and dejected, the face loses its natural expression, and it is frequently of a bluish-grey colour, indicating some interference with the circulation. The patient cannot give effective expression to his feelings; when asked a question he gives no response or replies in an undertone or an almost inarticulate whisper. There is often considerable delay in replying to questions, and it not uncommonly happens that just when the patience of the inquirer is exhausted, and at the very moment when the question is repeated, a faint murmur of reply is heard, or perhaps a movement of the lips is observed. This retardation applies to all actions; he moves slowly, hesitates over everything, and appears to think slowly. He often stands about idle, apparently not heeding anything; but upon close observation it is ascertained that he is not inattentive. This slowness and hesitation, however, is not incompatible with sudden impulsive actions, especially suicidal attempts. Melancholic stupor and melancholia attonita—the thunderstruck depression—may be considered an extreme form of this condition, and such patients are generally resistive, and actively oppose anything they may be required to do.

Such patients frequently take food badly, and they rapidly lose weight. The inactivity of mental process appears to extend to the bodily functions. Digestion seems to be delayed, there is deficient peristalsis, and constipation is almost invariably present. Often urine is retained for a long time, but the catheter is rarely needed. The total excretion of urine is diminished in quantity. Owing to the imperfect powers of expression it may be difficult to ascertain what the patient is thinking about; in most cases, however, it will be found that there are strange delusions or obsessions in the form of altogether unreasonable fears. In my experience hallucinations are extremely uncommon. Some trivial question, such as matters connected with clothing, or some unpaid bill or unwritten letter, are magnified into matters of vast importance, and entirely wrong notions of personal danger may haunt the mind.

It will be noted that the mental state I have described is almost the complete antithesis to mania, in which we find restless activity of mind, an apparent acceleration of the association of ideas, with exaltation.

It will be found that in the majority of cases the family history is not good; indeed, this form of insanity is more distinctly hereditary than any other.

The tendency to relapse is strong, and though we may with confidence expect almost every patient to recover from any particular attack, it is not possible to foresee how long the attack will last. There is little probability of dementia supervening. In not a few instances in which the number of attacks has been considerable there is little enfeeblement of mind even in old age.

Among my own cases there were 29 men and 16 women who suffered from the inhibitory form of melancholia. Of these 45 cases nearly all recovered from the attack, but at least 19 had more than one attack, and in 17 the family history was bad. It is hardly correct to use the word "recovery" in reference to this disorder; the patient gets sufficiently well to resume ordinary duties, but the instability remains.

The following is a verbatim account of the conversation of a lady suffering from the inhibitory form of melancholia. She had had several previous attacks, and her family history was bad. The attack in question had lasted about three weeks and appeared to be provoked by the worry of moving house. It will be seen that the remarks turn largely on this subject. In the intervals there were long delays and many inarticulate groans.

There isn't . . . is there? . . . No. . . . It's the boxes upstairs that I wanted. . . . Well, you see, it's only a dream. . . . There's none of us here, no one to open the door. . . . You see I cannot get to you. . . . I can't get out of the door. . . . (Why can't you get out?) Because there's trunks. I wish you could see it all. . . . I shall be left all alone. . . . There's everything. . . . What am I to do? . . . Because I can't get to my things . . . and . . . well, you see, there's . . . well, it's all upstairs . . . in different flights. . . . I've got no keys. . . . You . . . Well, I shall . . . I don't know what to do . . . 'cause I can't. . . . You find me. I'm all in different bits. . . . (How's that?) Well, 'tis . . . (I still do not understand.) . . . Well, it's the . . . it is so . . . the case, you know . . . of course, it means there's nothing at all. . . . Well, that's the . . . different floors, you see. . . . Oh, doctor . . . what am I to do? . . . There're . . . you want me, do you, upstairs? . . . There's nothing for us, etc.

It will be observed there is no disorientation, no real incoherence, but a strange impediment in consecutive thought; the imperfectly-formed ideas cannot be expressed.

E. F. had been a civil servant and had managed 200 women clerks. She had been twice depressed before the attack now described. After the last one she had been mildly excited.

I closely noted the development of her malady, the gradual change in expression, the blue, congested colour, and the growing inability to converse. In the course of a month her depression was severe, and she made two suicidal attempts, and was certified.

The certificates stated: "She is profoundly depressed, staring fixedly in front of her, with a most dejected, unhappy expression. She will not answer any question, and is rather resistive in her movements. She gives no sign that she hears anything. On admission it is noted that she would not speak, but will put out her tongue. Cerebration is slow, for she does these things after lapse of time. There is troublesome constipation. When her sister visited her she told her sister in a scrappy fashion that she was a wicked woman and ought to be killed. She is totally unoccupied and troublesome with food."

She recovered in nine months, and I believe keeps well.

THE INTRINSIC GROUP.

I have found it difficult to find a name for the next variety of melancholia. The word "intrinsic" has been selected because it conveys the idea that the disorder is inherent and genuine and is not a part of some other disorder.

The clinical features are intense misery and mental pain, usually associated with feelings of unworthiness and frequently accompanied by delusions of sinfulness. Patients suffering from intrinsic variety of melancholia can give a lucid account of their unhappy state; they are well able to express themselves, and they generally resent the suggestion that they are ill or in any way mentally affected. They are intelligent and able to answer questions accurately, and may make shrewd remarks upon what goes on around them. Many say they have lost all natural affection and do not love their nearest relatives, and they frequently believe they have sinned beyond all hope of forgiveness. Such patients are generally actively suicidal, and numbers succeed in ending their lives. Owing to the slight intellectual disturbance relatives are apt to refuse to accept the suggestion that they are of unsound mind, and so the needful precautions are not taken. In its milder forms this condition would be included under the term "simple melancholia" as used by many authors; in its more severe forms, when the distress of mind is extreme and there is much restlessness, the disorder closely corresponds with Dr. Lewis Bruce's use of the term "excited melancholia."[10]

The bodily health does not suffer so much as in the confusional or inhibitory forms; many of the patients are in very fair health, except that they are badly nourished and below their normal weight. Dr. Lewis Bruce has satisfied himself that excited melancholia is due to bacteria toxaemia. He gives a somewhat less favourable prognosis than I consider is justified in the group now described.

I have not found *intrinsic* melancholia associated with a bad family history so frequently as the inhibitory form, nor is there the same tendency to relapse.

I have notes of 42 cases, 18 males and 24 women. In 6 there was either a previous attack or subsequent relapse; in 12 the family history was not good. Of the 42 patients, 29 recovered, 3 committed suicide, and the remainder when last heard of were still depressed.

I consider we may look upon the intrinsic form of melancholia as an independent form of mental disorder, it being marked off from the inhibitory form by the striking difference in the clinical symptoms, and by the comparative absence of inherited predisposition. In none of my cases were there any maniacal symptoms either before or after the attack of depression.

The prognosis is not so favourable, as regards the immediate attack, as the inhibitory form, but after recovery there is decidedly less tendency to relapse. The unrecovered cases spend the rest of their lives in misery; dementia is slow to appear, and though in chronic melancholia the complaints become more automatic and do not depend on great intensity of feeling, the long-drawn-out suffering constitutes the saddest spectacle of asylum life. Happily, nearly 70 per cent. of cases recover satisfactorily.

I have not thought it necessary to give the notes of a case of intrinsic melancholia, as the disorder is common.

INVOLUTIONAL.

The last group which merits special mention is involutional melancholia, and in dealing with it I shall closely follow Kraepelin's description.

As the name implies, it appears in the declining years of life, in women at or after the menopause, in men somewhat later. In the great majority of cases there has been no previous attack of mental disorder.

The characteristic symptom is anxiety, apprehensiveness, with fear of impending calamity. Delusions are common, but hallucinations are rare. The nature of the fears are very varied, such as fear of exposure of an imagined falsification of accounts, fear of ruin and poverty, and the delusions include many altogether unjust self-accusations. Not a few patients say they have no clothes, are destitute, and must be sent to the workhouse.

It is a sad feature of many of these cases that hard-working men and women who have struggled successfully to provide for their old age, should in the autumn of their lives be harassed so frequently by the very fears that they might reasonably have expected to escape.

But the disorder, though a tedious one, is not so hopeless as one would anticipate. Kraepelin states that about one-third of the cases recover. Out of 27 cases taken consecutively, I found 11 recovered, but 2 subsequently relapsed, 5 died, and the remainder joined the unhappy group of chronic melancholiacs.

The following analysis of my 200 cases shows the relative frequency of occurrence of the various mental disorders which I have endeavoured to differentiate: General paralysis, 8; dementia praecox, 19; psychasthenia, 26; the confusional group, 17; inhibitory, 45; intrinsic, 42; involutional, 27; and unclassified, 18.

Few of us in any degree familiar with the subject will be able to say with the poet Fletcher[11]:

> There's nought in this life sweet,
> If man were wise to see't,
> But only melancholy;
> O sweetest melancholy!
>
> . . . . . .
>
> Nothing's so dainty-sweet as lovely melancholy.

Nevertheless, I do not think a study of this malady will leave us as dejected as the subject matter would indicate. In only two of the forms dealt with is the prognosis really bad, and in these Nature mercifully dulls the faculties, and the suffering is quickly lessened. In the other forms, we may in the great majority of instances confidently look forward to recovery.

Tanzi[12] has graphically described the joys of recovery from this disorder, and with two sentences of his I conclude this paper:

"When the melancholic patient has passed through convalescence, and has been able to assure himself that his terrible infirmity is really ended, there are no bounds to his joy. . . . If melancholia is the most painful of all diseases, its disappearance is the most delightful of all recoveries."

REFERENCES.

[1] Kraepelin: *Psychiatrie*, p. 194. [2] *The Anatomy of Melancholy*, by Democritus Junior, 1845 ed. [3] *Textbook of Mental Diseases*, p. 502. [4] *Textbook of Psychiatry*, p. 685. [5] *Problems in Psychiatry*, p. 246. [6] Lewis Bruce: *Studies in Clinical Psychiatry*, p. 46, etc. [7] The Leucocyte in the Acute Insanities. *Journal of Mental Science*, October, 1909, p. 726. [8] Dr. Menzies: *American Journal of Insanity*, October, 1893. [9] *Journal of Mental Science*, ibid. [10] *Clinical Psychiatry*, p. 92. [11] Fletcher: Nice Valour. [12] *Textbook of Mental Diseases*, p. 517.

THE RIGHTWARD EDGE OF CARDIAC DULLNESS.

By W. GORDON, M.A., M.D., F.R.C.P.,

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THERE is nothing more curious in the subject of cardiac physical signs than the failure of the profession to perceive how posture modifies the cardiac percussion dullness. I can find no adequate reference, if indeed any, to this point in any English textbook. When the change in the normal dullness produced by change of posture was described by me in 1905, at a meeting of the Royal Medical and Chirurgical Society, it was a new fact, and had to be verified.[1]

In cases of cardiac disease, as I then pointed out, the change in the dullness on change of position is even more considerable than in the case of the normal heart, and when we consider how very important these changes appear to be, how necessary it seems, both in diagnosis and prognosis, to be acquainted with them, one cannot but wonder that they have so long escaped the general observation of the profession. That they have escaped general observation is beyond doubt. The only reference to them which I could find, when I looked for it five years ago, was in Dr. Alexander Morison's work on *Cardiac Failure*. Dr. Morison gave a figure[2] illustrating the change in the dullness in a case of mitral disease, and added the following good advice:

> Whatever method be pursued in determining the dimensions of the heart by percussion, it is of the first importance that the posture of the patient should, so far as possible, be exactly the same on successive occasions when this point is under observation.

His book was published in 1897—thirteen years ago—yet, for all the effect his words have produced on current teaching, they might almost as well not have been written. In 1907, in a paper dealing generally with the changes produced by change of posture on cardiac physical signs,[3] I again drew attention to these changes in the dullness. But I, too, might almost as well have saved myself the trouble. Why? At one time I could not imagine that phenomena so obvious could have been generally overlooked. Now I am forced to think otherwise. I can only suppose that the common incapacity to percuss clearly is the cause of the oversight—that our words have fallen, so to speak, not so much on deaf ears as on dumb fingers.

My present purpose is not to re-enunciate what I have already sufficiently emphasized, but to carry the subject on to a somewhat further stage by indicating the area in which the change of dullness is generally most pronounced, and, whilst suggesting a cause for one peculiarity of the change, to furnish more precise reasons for paying attention to it.

If the figure illustrating the usual change produced in the normal cardiac dullness by changing from the recumbent to the erect position (Fig. 1) be inspected, it will be seen that the alteration in the lateral edges of the dullness is considerably greater at the right edge of the dullness than at the left; for whilst in the healthy adult the leftward edge usually moves leftwards about $\frac{1}{4}$ to $\frac{3}{5}$ in., the rightward edge generally moves rightwards nearly $\frac{1}{2}$ to $\frac{3}{4}$ in.—practically double the distance. How can this difference in the movements of the two edges of dullness be accounted for?

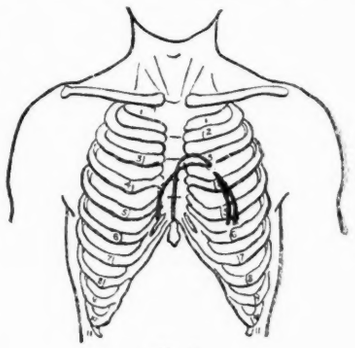

Fig. 1.

If we examine transverse sections of a human body frozen in the recumbent position, taken at the levels of the fifth costal cartilage and the third intercostal space respectively, as shown in Plates XII and XIII of Braun's *Atlas of Topographical Anatomy*, we see that the right auricle does not lie nearly so close to the anterior chest wall as does the right ventricle, and that a considerable part of the right ventricle falls back from the chest wall towards the right. Thus a great deal of the right heart is seen to be well removed from contact with the front of the chest. On the other hand, it is seen that the leftward border of the heart, at about the level of the fifth costal cartilage, lies only a little way beyond the leftward limit of that part of the heart's surface which is close to the anterior chest wall. We can therefore understand how it is that, in the recumbent position, more of the right side of the heart than of its left side is, so to speak, percussionally invisible.

It must be remembered, of course, that, in the dead body, distension of the intestines and retraction of the lungs do something to disturb the natural relations of the parts we are speaking of. But these sources of error do not, I think, invalidate the truth of what I am pointing out.

A comparison of an orthodiagram of the normal heart, such as the drawing (Fig. 2), reproduced from a paper by Drs. Clayton and Merrill,[4] with my percussion dullness diagram (Fig. 1) leads to the same conclusion—namely, that whilst in the recumbent posture, the leftward edge of dullness almost reaches the leftward limits of the heart, the rightward edge of dullness, bounded, as it generally is, by the midline of the sternum, is very far from corresponding with the heart's rightward limits.

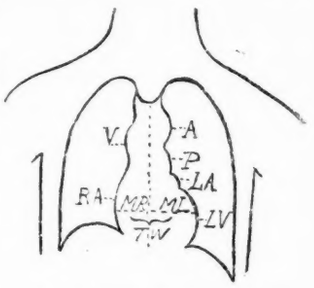

Fig. 2.—Orthodiagram of the normal heart, modified slightly from the figure in Drs. Clayton and Merrill's paper. V, Curve of the great vessels. R A, Curve of the right auricle. A, Curve of the aorta. P, Curve of the pulmonary artery. L A, Curve of the left auricle. L V, Curve of the left ventricle. M R, Width to right of the midline. M L, Width to left of the midline. T W, Total width—that is, M R + M L.

When, however, the erect posture is assumed and gravity no longer tends to pull the heart away from the anterior chest wall, the heart as a whole comes more fully into contact with the sternum and the rib cartilages, as is shown by two skiagrams taken by Dr. Cummings of Toronto, and published in an interesting paper by Professor Rudolf in the BRITISH MEDICAL JOURNAL of 1906.[5] Under these circumstances this rightward region of the heart which in recumbency is percussionally invisible, might, be reasonably expected to come more fully into view. That this is actually the case a comparison of the diagram (Fig. 1) of the normal heart dullness in the erect position with Fig. 2, the orthodiagram from Drs. Clayton and Merrill's paper, and with the heart itself, as shown in the frozen sections, makes evident. It becomes clear that the

width of the cardiac dullness in the erect position is a much more reliable measure of the heart's true width than is the dullness in the recumbent posture; also that the dullness in the erect position usually gives in the normal adult at least some idea of the dimensions of the right heart, which the dullness in the recumbent posture fails to do.

Now let us apply the foregoing to the study of the problems of disease. In cardiac disease, as I have stated, the difference between the cardiac dullness in the erect and the recumbent positions is even more striking than in the case of the normal heart, so that the measurements of the width of the dullness in the two postures often differ remarkably. And just as with the normal heart it is generally the rightward edge of dullness which moves furthest on change of position, so also it is generally the rightward edge of dullness which moves furthest with the diseased heart, only that the movement is usually more extensive. A few instances will suffice to make plain this very important and, I repeat, quite obvious clinical fact.

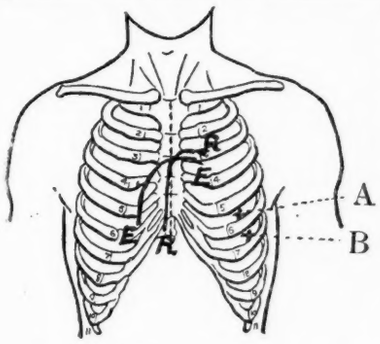

Fig. 3.—W.W., 60. Dilated and hypertrophied heart; slight albuminuria; slight apical systolic murmur conducted towards the axilla. M.R.: Erect, 1⅞ in.; recumbent, ⅜ in. A, Apex beat recumbent. B, Apex beat erect. R R, Outline of dullness in the recumbent position. E E, Outline of dullness in the erect position.

Let M.R. denote the distance of the rightward edge of cardiac dullness from the midline of the chest; T.W. the total width of the dullness; and, in the diagram given (Fig. 3), E E the outlines of dullness in the erect position, and R R its outlines in the recumbent position.

Mrs. B., 70, old-standing mitral regurgitation, slight albuminuria, commencing dropsy.

	Erect.	Recumbent.
M.R.	1¼ in.	0 in.
T.W.	7 in.	5¼ in.

Miss B., 57. Dilated heart. No murmur.

	Erect.	Recumbent.
M.R.	2 in.	¼ in.
T.W.	7½ in.	5 in.

Mr. A., 56. Dilated heart. No murmur. Slight albuminuria.

	Erect.	Recumbent.
M.R.	2 in.	0 in.

Mrs. G., 60. Heart hypertrophied and dilated.

	Erect.	Recumbent.
M.R.	2 in.	⅜ in.
T.W.	9 in.	5 in.

Mr. W., 60, dilated and hypertrophied heart, slight mitral regurgitant murmur; a trace of albumen.

	Erect.	Recumbent.
M.R.	1⅞ in.	⅜ in.

Mrs. V., 43, dilated heart. Two observations.

On January 28th:

	Erect.	Recumbent.
M.R.	3¼ in.	1¾ in.
T.W.	8¼ in.	4½ in.

On February 11th:

M.R.	1¾ in.
T.W.	5¼ in.

Such instances could be very easily multiplied, though to multiply them would serve no useful purpose. But it must not be supposed that so great differences are always met with. Here are a few cases in which the changes were less pronounced:

Mr. S., 43, very feeble dilated heart.

	Erect.	Recumbent.
M.R.	1¾ in.	1¼ in.
T.W.	7¼ in.	6¼ in.

In this case both lateral edges of dullness moved equally, which is, I think, quite unusual. Dr. Morison's case, in which the leftward edge moved further than the rightward (see his diagram), is, I find, exceptional.

Mr. W., 35, well-compensated mitral stenosis.

	Erect.	Recumbent.
M.R.	1 in.	0 in.

O. C., 24, old mitral stenosis, with marked pulmonary regurgitation and great enlargement of right heart.

	Erect.	Recumbent.
M.R.	1⅝ in.	1½ in.

In this last case probably the great size of the right heart kept it fixed in contact with the anterior chest wall, even in recumbency.

A single instance will suffice to show how these differences may affect diagnosis.

Some time since I saw a case with a friend, who is a very careful observer. He had been called suddenly to a boy of 19, a stranger to him, who had had a very alarming attack of syncope, and, as the condition continued serious, had sent for me. He told me he could find no evidence of cardiac dilatation, although the friends stated that such had been previously found. The lad's condition had made it impossible to raise him from the strictly recumbent position, and on percussing out the heart dullness in that position I, too, was quite unable to discover any dilatation. But by the time of my arrival the patient was already greatly better, and we were able to raise him cautiously into a sitting posture and repercuss out the heart dullness. We then found that the heart was obviously and considerably dilated, especially towards the right.

What, then, it will naturally be asked, is the value of the transverse measurements of the cardiac dullness, given without mention of the patient's posture at the moment, with which so many otherwise excellent descriptions of diseased hearts are supplemented? The only reply possible is "None whatever." For when the same heart, as in one of the cases I have quoted (Mrs. V.), gives, at one date, a dullness 4½ in. wide in the recumbent posture and 8¼ in. wide in the erect, whilst a fortnight later, coincidently with general and local improvement, a dullness in the erect posture of only 5¼ in., what certain use would any of these measurements have been with no accompanying note as to posture. If, on the first occasion, when the patient was rather ill, the heart had been examined in the recumbent posture and found to have a dullness 4½ in. wide, and, on the second occasion when she was much better, had been examined in the erect posture, and been found to have a dullness 5¼ in. wide, the natural inference would, of course, have been that the dilatation was increasing, whereas very much the reverse was the case.

To conclude: seeing that, in so many cardiac conditions, an estimate of the state of the right ventricle and auricle is an important factor in our judgement alike of prospects and of progress, it is surely only common sense to believe that these differences are matters not of curiosity, but of great practical importance. In the recumbent position we get, I submit, in many cases of cardiac disease a quite misleading idea of the condition of the right heart which is often then percussionally almost invisible. In the upright position we have usually the great advantage of having much more of the right heart percussionally in view.

I venture once again to submit these differences to the consideration of my fellow practitioners.

REFERENCES.

[1] The Influence of Posture on the Normal Cardiac Sounds and on the Normal Cardiac Dullness. *Roy. Med. Chir. Trans.*, vol. lxxxix, 1906. [2] *On Cardiac Failure and Its Treatment*. London, 1837, p. 33. [3] Bodily Posture and Cardiac Physical Signs. *Lancet*, August 10th, 1907. [4] Orthodiagraphy in the Study of the Heart and Great Vessels. *Amer. Journ. of Med. Sci.*, 1909, pp. 549-562. [5] The Influence of Bodily Posture on the Position of the Heart. BRITISH MEDICAL JOURNAL, October 20th, 1906.

IN consequence of the alleged outbreak of yellow fever at Sekondi, to which eight deaths among Europeans have already been attributed, a band of seven medical volunteers, headed by Sir Rubert Boyce, is sailing for the Gold Coast this week under the auspices of the Colonia Office.

THE STATE CIVIL MEDICAL SERVICES,

WITH SPECIAL REFERENCE TO THE POOR LAW AND THE REORGANIZATION OF THE HOME CIVIL MEDICAL SERVICE.*

BY JOSEPH GRIFFITHS, M.D., M.C., F.R.C.S.,
SURGEON TO ADDENBROOKE'S HOSPITAL.

THE STATE CIVIL MEDICAL SERVICES.

BEFORE a State service of doctors came into existence in this country, doubtless aid of a kind that was at the time considered adequate was forthcoming, but that aid, satisfactory in its nature as it might have been and probably was, although freely given, was not at the service of the State; and no one except the man who could pay could command it to meet any particular necessity or emergency. To-day State service of one kind or another is so common that we may take it as permanently established; also, that the principle involved in the maintenance of such services at the expense of the State and for the advantage of the community is universally accepted and acted upon without demur or question.

The growth of this State Civil Medical Service has been slow, but not many years pass without Parliament giving sanction and financial support to the creation of a new section in this medical service. Quite recently there has been established the medical officer for the examination and physical care of school children, and another for the control and supervision of the new order of midwives, and there is already an inspection over public nurses.

Many of you here to-day hold one or more offices in this State Medical Service, and most of you know from personal experience the present working of the medical service of the Poor Law—the oldest branch; others know the machinery of the public health branch, which has by now reached a respectable age, having been born in the year 1848; and others still are finding out how to carry on the newer services which doubtless will gradually expand, perhaps to great proportions. However extensive our individual knowledge may be in any particular division or branch of this public service, I hope that the result of an effort at gathering a short story of the evolution of the ordinary State civil medical services may prove of interest to you as it has proved to me.

As the civil medical services are certain to increase and to gain greater and greater importance with the onward march of events, it is clear to my mind that the best interests of the State, as well as those of the profession of medicine, will be served only if medical men throughout the country will periodically take under review the policy of the State in such matters, and duly consider such policy so as to be able to offer sound advice to those who are more immediately concerned with the regulation of State matters than we are, or are likely to be. In the consideration of such subjects it is not a question of one medical man finding fault with another one in ethical or any other matter, but a question of getting one and all to see eye to eye and to guide the public in the way that the knowledge doctors especially possess determines and dictates. By all means let us be doctors first, but, being doctors, let us devote our knowledge at any rate to the welfare of the community at large, and do this in an organized and systematic way, and not only as individuals, one here and there, perhaps crying in the wilderness with no one near enough to hear our voices.

Now, if we take a look back upon the time before the reigns of Henry VIII and Elizabeth we may picture to ourselves a condition of affairs in which industry apart from agriculture with its side shows may be regarded as absent. During and up to this period all men, women, and children engaged in the national industry, agriculture, were always welcome to a share of the food and clothing that the farm or estate could produce and provide, and so it was that want, except in the case of the lazy and the good-for-nothing folk, perhaps never arose, certainly not to such an extent as to demand systematic treatment on the part of the State. It must not be forgotten, however, that up to the reign of Henry VIII the religious foundations throughout the length and breadth of the land rendered the special service of providing for any extreme want, either in food or in clothing, but this was purely a matter of charity.

The members of these religious orders, among whom the intellectual faculties were cultivated, could deal with matters requiring knowledge and foresight in a larger way than the common people; hence it was that in times of scarcity, from a bad season perhaps, the granary of the monastery and its store of wine and food, each of which was constantly kept replenished, was ever ready to meet emergencies. When Henry VIII quarrelled with the Church as then constituted and determined to abolish the religious foundations by confiscating the buildings and other properties, the moment his wish was carried out a magnificent organization for the distribution of charity was swept away, and ever since we have been struggling with a mixture of State and private help, often hopelessly inadequate, not in the main from want of means but from lack of an organization which could embrace all that which is due to a member of the State and that which Charity says should be offered even if not due or deserved. In consequence of the disorganization which followed upon the abolition of the monasteries the old charitable channels dried up, and nothing much remained except the unorganized charity which private persons did undertake.

When in the reign of Elizabeth industries of all kinds began to arise, for the first time in our history communities or colonies of men, women, and children were needed to develop those industries. At this time the master who paid a wage for work done came upon the scene, and men, women, and children were employed not only for the purpose of supplying themselves with food and clothing, but also for the very important purpose of giving that stimulus to the brain of the man who desired to make capital, either for his own welfare, for that of the community he lived in, or for the amassing of wealth which could bring in its wake power to himself and to his descendants.

The master who had his eye upon amassing wealth was apt to lose sight of the fact that the more he amassed the more he got out of his workpeople, and, at times, this may have led to oppression; further, it may have led to what is of greater significance—namely, the regulation of the work to meet the fitful demands of purchasers. Busy times were all to the good, but slack times to people unaccustomed to hoard for a rainy day were ever unwelcome. Besides, that feeling which the landowner and farmer had towards all who worked for them, and for whom they were in a measure responsible for feeding and clothing, gradually gave place to the feeling that it is all a business concern—work being paid for in money, leaving no balance of indebtedness from employer to the labourer—a soulless thought which has engendered many a needless struggle. The outcome of this new industrial development following upon the abolition of the religious foundations was to bring into prominence the presence in the country of those who were unable to provide themselves, through misfortune or disease, with sufficient food, clothing, and shelter.

This evil grew to great proportions, and in the forty-third year of the reign of Queen Elizabeth an Act was passed by Parliament to meet the evil and to provide relief for the poor. The organization for distributing this relief was first constructed at this time, and to-day the same organization with minor modifications is still in force.

In this reign provision was made only for relief in the way of food and shelter to the poor, and it did not occur to the authorities then, nor for some 150 to 200 years after, that the poor, in addition to help for keeping body and soul together, were deserving of medical and surgical relief; indeed, not until the

* Read before the meeting of the Cambridge and Hunts Branch of the British Medical Association, December 3rd, 1909.

early part of the reign of George III is mention made in the public Acts of medical relief. The justices of the peace were at this period empowered to order medical relief to the inmates of workhouses, and for the first time in our history there was called into existence a system by means of which medical relief was ordered and paid for by the State—to be correct, by the parish and its vestry, which was then the administrative body for such purposes. We find that between the years 1750 and 1800 the practice of giving medical relief systematically and at the public expense gradually established itself, and about this time parishes began to appoint medical officers who were regularly employed. This practice was almost confined to the south, east, and centre of England until the year 1834, when the Poor Law Amendment Act was passed. Although the practice of giving parish medical relief at the public expense was in actual working order at this period in about half of the parishes in England, yet the subject of medical relief is mentioned only once in the Poor Law Amendment Act, 1834, and then it is for the purpose of extending the practice confined to the inmates of workhouses in the reign of George III—namely, of conferring a power upon the Justices of the Peace to order medical relief to a person in cases of sudden and urgent illness.

Up to the year 1834, as I have said, the unit for the administration of relief was the parish, and the body for such purposes was the "vestry"; therefore, whatever was undertaken for the relief of the poor was under the charge of the vestry, and the medical man was appointed, if at all, by the vestry, consisting of churchwardens and overseers.

Now, on the passing of the Poor Law Amendment Act in 1834, the most important change in the administration of the Poor Law that occurred was the combination of two or more parishes into "Unions" controlled by a board of guardians, the members of which are elected in proper representative proportions from the different parishes composing the union. With this change the appointment of medical men to give relief to the sick poor was transferred from the hands of the vestry to those of the guardians; and the Commissioners appointed to administer and put into working order the Poor Law Amendment Act issued an order to all Unions throughout England and Wales to appoint medical officers for the care and relief of the sick poor. Accordingly, after 1834, the Boards of Guardians throughout England and Wales, being the administrative authorities for a union of two or more parishes, in due course proceeded to elect medical officers to attend upon the sick poor.

Therefore, not only were the inmates of the workhouse looked after, when sick, by a properly appointed medical officer, but, further, all the unions were compulsorily ordered to take steps to make similar provision for those in receipt of outdoor relief and those who were unable to provide medical relief for themselves.

It was this action on the part of the Poor Law Commissioners that secured for England and Wales, for the first time, the provision of medical relief to the sick poor generally at the expense of the community.

It will especially interest us if we look for a moment at the mode of election of such medical officers, for it reveals the condition under which medical men then worked, and, moreover, gives a clue to the cause of the general dissatisfaction that subsequently arose in the ranks of the medical profession. This mode of election was what is known as the "tender" system, which means that the medical work of the union was yearly let out to medical men, and that the lowest bidder obtained the appointment. There was no security of tenure, and in consequence the appointment soon became of the value it would fetch as an advertisement to a doctor who wished to retain an office he had once held or to one who wished to set up in a new district and desired something to which he could hang on and by which he could legitimately show himself in the area of the union. Owing to this and other causes it was not long before discontent arose not only among members of the medical profession, but also among the poor and their friends.

The doctors complained of the system of election by "tender"; of the insecurity of tenure; of the largeness of the area which they often had to travel; of the smallness of the stipend, and, to their credit be it noted, of the difficulties put in the way of the poor in obtaining medical relief in cases of urgent or sudden illness; lastly, of the incompetency of many in their own ranks, who, in their opinion, should be compelled, before being entrusted with the duty of attending the sick poor, to seek greater education, wider knowledge and experience.

Remedial measures were not adopted until after the year 1839, when a Committee of the House of Commons reported upon the working of the Poor Law, and in consequence of this report the election by "tender" was abolished by an order of the Poor Law Commissioners.

This action of the Commissioners removed only one of the causes of discontent, and so it was that agitation was kept going. During this time and on to the year 1844, the one man in the profession who seems to have been the champion not only of medical men but also of the poor was a Mr. G. W. Guthrie, who was President of the Royal College of Surgeons (England) in the year 1833. His efforts were seconded by the Council of the Provincial Medical Association, a body that preceded and gave birth to the present British Medical Association. Curiously enough Guthrie, the champion of the medical profession, was met by an equally capable, resolute, and just-minded man, a Commissioner, by name George Cornewall Lewis, whose paramount duty was to guard the interests of the members of the community and the State. He, however, appreciated the position of the medical men, and did all in his power to further their interests so far as that was consistent with his duty as Commissioner. Before going any further I will read a letter from the Council of the Royal College of Surgeons of England to the Commissioners in the year 1835, soon after the Poor Law Amendment Act was passed.

To the Right Honourable the Lord John Russell, His Majesty's Principal Secretary for the Home Department.

The Memorial of the President, Vice-Presidents, and Council of the Royal College of Surgeons in London, respectfully showeth,

That several members of the College have complained to your Memorialists, that under the orders and regulations issued by the Poor Law Commissioners persons have been appointed to the surgical charge of the sick poor who are not duly qualified to practise surgery.

That such appointments are injurious to the members of the three Royal Colleges of Surgeons in the United Kingdom, and manifestly dangerous to the poor.

That as the Society of Apothecaries of London are not authorized to examine their licentiates as to their proficiency in the art and science of surgery, such licentiates cannot be regarded as qualified to judge of the operations and other ministrations of surgery, on the skilful performance of which human life imminently depends.

That by an Act of the 4th of His late Majesty, cap. 64, relating to gaols and houses of correction, it is required that the surgeon to each of such gaols and houses of correction should be a member of one of the Royal Colleges of Surgeons.

That your memorialists cannot but believe his Majesty's Government feels as much, or greater, interest for the poor as for criminals; and respectfully, but earnestly, request that it be an instruction to the Poor Law Commissioners to adopt the principle of the said Act in the future appointments to the care of the sick poor of the several parishes or unions in England and Wales.

(*Signed*) JOHN G. ANDREWS, *President.*
ASTLEY COOPER, } *Vice-Presidents.*
ANTHONY CARLISLE }

29*th day of July* 1835.

If we subject this letter to criticism, it will be observed that the two reasons given for the action taken by the members of the College are—*one*, that the members are not afforded that protection in the practice of their profession which protection they were led to expect and which they thought they were entitled to in virtue of the trouble and expense they had incurred in the acquisition of the diploma of the Royal College; and the *other*—that the sick poor were not treated in the manner they ought to be, because many of the medical men were not

properly qualified to undertake the work; in plain words the apothecaries were not surgeons, and it was stated they were not capable of performing the service, always in demand, that the surgeon could and ought to be able to render. One motive of the members of the Royal College of Surgeons was to improve their own position, and the other was to secure for the poor the best skill then at the command of the State.

The doctors did not, however, obtain all they wished and asked for, but they did get (1) the appointment by election of the Guardians with the approval of the Poor Law Commissioners; (2) security of tenure, for the appointment is for life, subject only to good and proper behaviour; (3) payment, in part as a yearly stipend, and in part as extra fees for special work, fixed by the Poor Law Commissioners and not alterable by the guardians; (4) all doctors appointed after 1844 required the diploma of the Royal College of Surgeons, as well as one from the Royal College of Physicians or from the Apothecaries' Hall. In this way the services of properly qualified medical men were secured for the sick poor, and the medical men themselves were satisfied with the conditions of the service and with the remuneration they were to and did receive.

No change has been made in the condition of the Poor Law medical officers since this date—1844—and to-day the salaries are much as they were nearly seventy years ago; the fees for extras have not been altered, and the conditions under which medical relief can be obtained are unchanged, with the exception of the abolition of disfranchisement; the regulations or conditions of appointment, the characters of the qualifications, and the right of holding the office during good behaviour remain the same.

The doctors further held that the poor should in cases of emergency and even in case of ordinary illness have the right to send for the doctor at the expense of the parish or community and not be compelled first to seek an order from the relieving officer, who either lived far distant or was away from home attending to official or other duties; for unless an order was obtained the doctor had no claim for payment from the union, and if he went it was at his own expense. Delay that was dangerous to the lives of the sick poor occasionally arose in consequence of too close an adherence to such a system.

Guthrie very strongly supported this demand, not only, be it noted, in the interests of the medical men, who then, as now, did more in the way of charity than was their proper share, but also because he felt that any one who was taken suddenly ill had a right to the services of a doctor; and he maintained that the union should, in case the person taken ill was poor, pay on demand made by the medical man. The Commissioners resisted this demand, and laid it down as an essential principle of the Poor Law that no one is entitled to relief in any shape or form from the union unless he or she be destitute; but in case a person obtain service and is afterwards found to possess means, the cost of keep to the guardians shall be recoverable if necessary by action at law.

Had Guthrie's view prevailed, namely, that any one has the right to the service of the doctor if taken suddenly ill, and this at the public expense, I feel sure that we would have with us to-day, not voluntary hospitals here, there, and everywhere, but large State infirmaries in each union or district with a full staff of officers, physicians, and surgeons, drawing, perhaps, handsome salaries from the State. It may be that it is well that State infirmaries do not exist except in special cases.

The public has always sympathized with the poor, as seen in the maintenance of hospitals where the poor can go and are sure of receiving the best advice and help at the command of the institution free of charge. If we look back upon hospitals we see that they arose to give help to the sick poor, and our oldest institutions date back long before the time when the first Poor Law Act was passed in the forty-third year of the reign of Queen Elizabeth. So far as we know, such hospitals have always drawn to them men of the first rank in the profession of medicine; men who have given their services in lieu of the opportunities they receive for practice and study; each side, the poor and the doctor, has been mutually benefited and the generous public has indirectly reaped advantages of no mean order. As hospitals grew in importance, in numbers, and in accessibility the poor went to them in larger and larger numbers, and the special work of the Poor Law medical officer became less and less, until at the present time it is comparatively small except in some large towns where an important union infirmary (one or more) is still a necessity.

Where the Poor Law system failed the voluntary hospital system succeeded, and to-day, I venture to think, we all rejoice that our hospitals are open to all sick alike in case of emergency, to the rich only in case of urgent illness, to the poor for minor ailments, prolonged illness, or simple and severe operations. The poor can in this way, through the charity and good feeling of their fellow beings, seek and obtain medical relief of the highest order. Those who are thus helped are expected, if circumstances permit, to help others in their turn, and relief is given, not because the individual deserves it but because he is suffering.

Our Poor Law system, then, is legally only prepared to render service in case of destitution and not without a special order from a duly appointed officer—relieving officer of the union; and this is not given without evidence that the applicant is destitute or necessitous. In the case of our hospitals, on the contrary, charity provides advice and help for all who are in need of her services. True, this charity is abused now and again, especially in hospitals with medical schools attached or with teaching functions: it is doubtful, however, if the abuse is more than what human beings like to tolerate.

Having so far referred to the Poor Law in a general way, and to the relation the medical profession bears to it, the next step that naturally follows is a reference to the medical relief section of the report of the last Royal Commission on the administration of the Poor Law. I will refer to the report of the majority only. In it there are submitted for consideration *two great principles* with the view of improving the present system of dealing with the sick poor who are destitute, and who throw themselves upon the State for help. The *first* is that a regular service of inspectors be appointed, drawn presumably from the ranks of the medical profession, to inspect the work of the officials and to see that proper attention is given to the sick poor, whether treated in Poor Law infirmaries or at their own homes. Dr. John Price of Llangollen,[1] in the year 1844, advocated this system, but not without first making the officials independent of local influence—a condition, I venture to think, essential to the success of any such scheme. Medical inspectors under the present system may do their work well enough, but if the parish doctors or those who may replace them are kept under local control, it will not be easy for an inspector to say what he thinks he ought about the care of the sick, and at the same time do justice to the official, who will be judged not by men who possess the requisite knowledge to give a proper judgement, but by men who are for all practical purposes devoid of that knowledge, and who are easily influenced by local prejudice, and who may have a friend ready to take on the work. This is what was done from 1834 to 1844 and likely enough will be done again if opportunity be given.

The *second* principle is, that the sick poor be treated in the same sort of way as members of clubs and provident dispensaries are at present. The authorities by arrangement with such clubs and provident dispensaries would grant orders for the destitute sick to have attendance on application or by visits at home. In relation to this proposal it will be of great interest to you all if I read to you a letter from the Newmarket district, and sent in 1844 to a Committee of the House of Commons which inquired into the working of the Poor Laws.

[1] See letter appended, p. 1344.

TO THE HONOURABLE THE MEMBERS OF THE COMMITTEE OF THE HOUSE OF COMMONS, APPOINTED TO CONSIDER THE SUBJECT OF "MEDICAL RELIEF" IN THE POOR LAW BILL NOW PENDING IN PARLIAMENT.

We, the undersigned medical officers of the Newmarket Union, beg most respectfully and humbly to approach the Honourable Committee of the House of Commons now sitting, and beg to state that the system of remuneration to the medical officers of this union is by a pauper list, for which 2s. 6d. per head is paid, and by a fixed sum 7s. 6d. for every special case. We object to this system; not in principle, because, if fairly carried out, it is one of the best, if not the best, of plans hitherto offered to the profession and to the public. In making any alteration, we feel assured the Honourable Committee will have chief regard to the comfort and advantage of the sick poor. If it were possible, therefore, to adopt a system which would facilitate the communications between the doctor and his patient, in lieu of the present objectionable one of seeking medical relief through an order from the relieving officer, much suffering would be saved to the poor, the protraction of the case would be averted, and life frequently saved; besides saving an immense amount of labour to the ill-paid surgeon. In other words, the paupers seeking assistance by the special order system are often deterred from applying so early as they would otherwise do, from the difficulty of prevailing on the relieving officer to consider their illness sufficiently serious to grant such order; often being told, too, the order can only be granted as a loan; and thus, by delay in proper attendance, urgent, or in some cases mortal, symptoms have set in. In the Independent Labourers' Medical Club, established in this district under the benevolent patronage and high sanction of the Duke of Rutland, the Marquis of Bute, and other influential persons of the neighbourhood, members have the privilege of selecting their own doctor, and apply for his assistance at any time when they feel to require it, without losing time by seeking an order elsewhere. It is to avoid the evils at present inseparable from the plan adopted here that we humbly and earnestly call the attention of the Legislature to modify the arrangements for medical relief in the coming Poor Law bill, so as to put the sick and indigent poor upon a better plan for quickly obtaining assistance when they may be overtaken by accident or by disease; and we humbly submit this desirable consideration will be best accomplished by strengthening the power vested in the Poor Law Commissioners, as we have ceased to confide in the liberality entertained by boards of guardians, who are generally actuated by feelings of economy or local advantages in their arrangements for providing medical assistance for the sick poor. And your petitioners will ever pray, etc.

(*Signed*) E. L. KNOWLES. ROBERT TYSON.
ALFRED JONES. W. G. STUTTER.
THOMAS LUCAS. S. M. PECK.
HENRY CALTHROP. R. FAIRCLOTH.
HENRY MILLER.

The pay seems to have given satisfaction, but the real drawback, so it was said, was that a patient taken ill had to provide himself or herself with an order from the relieving officer, otherwise the medical man, if he went, did so entirely at his own expense. The choice of doctor lay with the poor.

This plan was adopted for a time in the Newmarket Union, and here, as well as in Northumberland, where the same system was tried under the patronage of the Duke of Northumberland, the scheme failed and fell into disuse. We have every reason to suppose that if tried again it will meet with the same fate.

So far as the medical profession is concerned, the recommendations of the Royal Commission affect it in a very material way.

I take it the suggestion is that the present office of the Poor Law medical officer is to be abolished and that the poor are to be allowed to choose their own doctor or one of several attached to a provident dispensary. If I am right, then I am sure it is time for us to wake up, or else the State will make us contribute not only our share of the rates and taxes, but also a good portion of our knowledge and skill towards the treatment of the sick poor. We shall have thrown upon us not only the burden of the citizen, but also an additional burden in the shape of charity—indeed, we shall be slaves to the community, and shall be regarded as men whose duty it is to pay all rates and taxes, and besides to attend the sick poor on a provident basis. I will venture to say that the members of the medical profession, if ever they accept this position, will deserve to remain slaves, and the State will be quite right in demanding from those doctors not only the contributions every citizen is liable to, but also something no other member of the community can give. We are, I am sure, more than ready to undertake our share in the work of the country, but we ought not to stand such an imposition as the Majority Report suggests should be thrown upon us. This is nothing less than an imposition, and once put on will hang round our necks for many generations.

The work in connexion with the Poor Law should, I maintain, be properly paid for, and all charity left to charitable institutions. The Poor Law work is what the State is prepared to provide for any one who is destitute or without means to pay for medical attendance, and this work, like any other the State takes in hand, should receive proper remuneration; whereas the work done at a real provident dispensary or at a voluntary hospital is given free of expense, and the honorary medical officers give their services free of charge. They are content with the advantages they obtain from the practice the appointment brings with it, and their services are given not because they desire to render charitable aid to less fortunate members of the community, but because they will indirectly gain knowledge and experience which may prove invaluable to them in the practice of their profession. The doctors and the public gain in more or less equal proportions, and we all reap the benefit the cultivation of charitable thoughts and practices bring in their wake.

We may now leave the Poor Law Medical Service and briefly review the services that have been established since the year 1834. Vaccination officers were created in 1840, and, with modifications as to fees and other minor details, the system continues much the same. The vaccination officers from the beginning were, and still are, appointed by the guardians and approved by the Local Government Board; the appointment is terminable by notice given by either party. The fees, however, have from time to time been modified, and to-day the fees may be regulated by the guardians.

The next branch of this State Medical Service to be called into being was in connexion with public health. In the year 1848 the first Public Health Act was passed. This conferred powers of very great extent and of immense importance upon local authorities, urban district councils, borough councils, and county councils. The sphere in which action might be taken under this Act is almost boundless, for the object of the Act is the prevention of disease; in other words, the maintenance of a standard of health, which standard will, we hope, gradually rise as time goes on.

The conditions affecting food and drink supply, provision of light, air and sunshine, the removal of all substances injurious to the health of the public generally; the prevention of the spread of disease and the prohibition of the conditions known to advance or favour disease, etc., come under its scope.

Well, it is interesting now to note that after all the fuss and bother to obtain security of tenure for the parish or union doctor between 1834 and 1844—four years later the medical profession acquiesced in a mode of election for medical officers of health that it refused for the parish doctor. Accordingly, the medical officer of health, who occupies a position that ranks higher, is paid better, and has thrown upon him greater responsibility than is given the parish doctor, is now and has been since 1848 elected by the local authority, either the union, district council, borough or county council. The appointment, it is true, must be sanctioned by the Local Government Board, but the appointment need not be made for a period extending over one year. Security of tenure is still wanted in England and Wales. London and Scotland have wisely secured it. The want of this security of tenure is often seen, for unless the public are aroused to the necessity of change the local medical officer of health is often powerless to insist on essential reforms, especially where important local people are concerned and where the suggestion of reform, it is thought, would reflect discredit upon such important local folk.

The factory surgeon is another important officer, but this officer, like the prison doctor, is under the direct control of a Government Board—Home Office.

Since the passing of the Education Act of 1907 it has become clear that in order to carry out its provisions medical officers must be appointed to inspect and to see that children are in a fit state of health to

profit by the education given at the expense of the State. In this instance also the medical profession has been found asleep, and the whole matter has been arranged, and, now that everything is for all practical purposes finished, we, as medical men, wake, rub our eyes, and hurry up to catch lost time and recall lost opportunities. This is of no use.

There are other State offices held by medical men to which I need not refer, as I think I have said enough to show that, sooner or later, it will be necessary to review this question in its entirety, and that primarily in the interest of the State, and only secondarily in the interest of the medical profession.

Outline of a Plan by John Price, M.D., Llangollen, to Improve the System of Administering Medical and other Relief to the Sick Poor of the Different Unions in England and Wales; and for the Better Regulation of the Medical Officers, and of the Remuneration for their Professional Services in their Respective Districts, so as to place them in a more Respectable Position than at Present.

1. That a proper number of superintendent medical officers be appointed by the Government, or by the Poor Law Commissioners, to superintend the medical department of the different unions in England and Wales.

2. That two or more superintendent medical officers be appointed for North Wales, the same for South Wales, and a proportionate number for England.

3. That a certain number of superintendent medical officers so appointed form a board.

4. For the medical board so constituted to appoint the medical officers in each district in the division under their control, but subject to the sanction of the Poor Law Commissioners.

5. That each superintendent medical officer visit the several districts in his division once a fortnight or month, or at some other specified period, to hear complaints and rectify abuses (if any) of the sick poor.

6. That the medical officer of each district keeps a regular register of cases, and sends or gives the superintendent a copy of the same every fortnight, as is now done to the Board of Guardians of the different unions, for the satisfaction of the Poor Law Commissioners.

7. That the medical department be entirely from under the control of the Board of Guardians and overseers in each union.

8. That a proper list of the sick poor be forwarded by the medical officer to either the Board of Guardians or to the relieving officer of each district every week or fortnight, with medical observations on cases when necessary.

9. That a list of all actual paupers, and a statement of such others as are, under the Poor Law Act, to be attended by the medical officer of each district, be given or sent to him at stated times by the Board of Guardians.

10. That each actual pauper has cards given to him, to be filled up by the medical officer when the said pauper is ill, and the card to be returned by the pauper to the medical officer on recovery. And that any other person having a right to medical advice, according to the Poor Law Act, may, by right, apply for a card to the medical officer subject to the above regulations.

11. That the said card so filled up, may be taken or sent by the pauper to the relieving officer during illness for extra assistance, or money, or diet.

12. That the chairman and *ex officio* guardians (being magistrates) and the board of guardians, do entirely manage the poor of their respective unions in every respect except the medical department; they being always, as at present, subject to the control of the Poor Law Commissioners.

13. That each superintendent and other medical officers are paid by the board of guardians a reasonable fixed income, regulated according to the population, number of paupers registered as sick, nature and extent of the district, besides for surgical cases, and difficult cases of midwifery, according to the Act of March, 1842, and also for vaccination per case.

Dr. Price does not recommend the plans of so much for each sick pauper attended, nor for mileage, as both such plans would be open to much abuse, as all frivolous cases might be registered in the one instance, and in the other useless distance visits to the poor might be made.

The Reorganization of the Home Civil Medical Service.

The rapid increase in the amount of work the State throws upon doctors, and the creation of new services, make medical men think not only of how the work can be accomplished, but also how it can be best organized to fulfil the purposes the State has in view, and that in the most effective, useful, and economical way. There can now be no question of seeing how we can do away with one or more of these services, or reduce the amount of the work called for, and so it may be as well for us to realize that no other course is open to us than the course of reorganization of a service that must of necessity become of paramount importance to the State, not merely in the way of treating the sick poor but chiefly along the lines of preventing the occurrence of disease which for ever threatens men when congregated in communities and subject to the necessities of industrial life.

In order to summarize the work of a State Civil Medical Service we may divide the work into two great divisions, namely, (1) the relief of sickness among the destitute poor, and (2) the prevention of the spread of disease from community to community or from person to person and the promotion of conditions necessary to the enjoyment of good health.

1. The relief of sickness has been done by the Poor Law medical officers. There is one matter I would like to point out here, and it is that in connexion with the Poor Law there have been established large infirmaries, especially in and around London and very big towns. So long as the destitute poor only are therein treated there can be no objection raised whatever the cost of providing what is right and what we ought to supply to our sick poor. But in the Poor Law Commission Report, 1909, it will be seen that in some of the infirmaries patients who are themselves ratepayers get admitted and willingly pay the prime cost to the guardians for keeping them for a short time, for example, in connexion with surgical operations. Now, I maintain, these infirmaries were built and are upheld for one purpose only, and that is to give relief to the sick poor. When, however, a man gets himself into an infirmary and it is afterwards found upon inquiry that he is not destitute the guardians ought to treat him as a private person and call upon him to pay to them, not only the prime cost of his keep but the equivalent of what would be charged him in private life, for similar services and similar accommodation. In short the ratepayers did not sanction the building of Poor Law infirmaries for any other purpose than the treatment of the sick and destitute poor. Further, the medical man elected to the office of doctor to a Poor Law infirmary accepts the office on the understanding that the guardians have no claim upon him for services in addition to those necessary to attend to the sick poor in the House.

2. The prevention of disease has for over half a century been undertaken by the public medical officers of health. This department may, indeed, be said to have begun with the appointment of vaccination officers in the year 1840, and since it has been increased not only in size but in scope, and surely it will continue to do so as time goes on, for our very object in life is primarily to enjoy good health, and that cannot be secured without making the conditions under which we live as near natural as possible. While the department concerned with the Poor Law has remained stationary, that concerned with the health of the community has progressed, and for over half a century our Government has added a new function here and another there, until at last we have reached a stage when I think we ought to gather together the different medical functions now carried out by the State, and see if it be not possible to group them together into line. We have the Poor Law Medical Officer, Vaccination Officer, Medical Health Officer, under the Local Government Board; the Factory Surgeon, under the Board of Trade; and the Medical Officer for the Inspection of School Children, under the Board of Education, etc. The Poor Law Medical Officer, the Medical Officer of Health, Vaccination Officer, Factory Surgeon, Medical Inspector of School Children, and Medical Inspector of Midwives are all of them men educated on the same lines. They, however, work independently of one another and are under different authorities—authorities which have in reality no claim to regulate and control them, except that they supply the means for carrying on these several services.

Why should the Local Government Board deal with and control one branch of this service, the Board of Trade another, and the Board of Education still another? The only answer that can be given is that each Board in its turn found work thrown upon it that its ordinary officials could not perform and so it gave that work to members of the medical profession. We undertook what, in some cases, was right we

should undertake, but in others, the work was thrust upon us with an almost intolerable impertinence.

Be that as it may, the work I now propose to take in hand is to show how a Civil State Medical Service may be organized, and the various functions at present carried out by independent bodies of officers may be brought under one effective control. I maintain it can be no advantage to a department like the Local Government Board to retain control over the medical officers of health, for the community only demands that the work shall be properly done; nor can it be any advantage to the Board of Education to have the medical officers of schools directly under its control, provided the inspection be duly carried out; nor indeed, can it be to the advantage of economy to have the medical work of the State carried out by so many independent boards and so many officers having no connecting link between them. These medical officers are, as I have said, trained medical men; they, one and all, work for the State and are paid by the State. Yet they are in their work independent of one another, and under different authorities which are probably as independent of one another as bodies can possibly be.

The Department of Public Health is perhaps the best organized, and it possesses a large staff of highly trained men with a medical education, though many are necessarily not acquainted, except in a general way, with the practice of their profession. And were I to take any one department as a basis to build up the whole it would be this one; but as my knowledge is necessarily incomplete, and as I am dealing with the matter from the point of view of general policy, it will not be of any advantage to enter upon such details here. The first necessity, so it seems to me, is the realization that it must be to the advantage of the State to have its various, and now independent, medical services united together into one complete whole that possesses the capability of expansion as occasion arises, and that can effectively control the entire field, now in part overlooked by the Local Government Board, by the Home Office, by the Board of Trade, or by the Board of Education.

A board for the regulation and control of the civil medical services would form the fountain head. This board should rank just like, say, the Local Government Board, having the same status, similar powers, with regard to the spending of money allotted to it by Parliament; a civil head, responsible to Parliament; and a professional head with a supporting committee of officials selected from each grade of the service, and perhaps from each one of several large divisions of the whole country. A board thus constituted could undertake the organization of all the work of the State, and, I venture to think, subsequently control it not only to the satisfaction of the country but also with strict regard to economy.

The civil head would be able to represent matters in Parliament, and could at any rate point out the folly of passing measures which throw duties upon medical men that run counter to their professional honour, as was done of late in the case of the Notification of Births Act; for what medical man, I should like to know, is ever going to send word to public authorities that Miss —— has this day given birth to a fine boy! Again, such a board could soon organize its sections: (1) Relief of the destitute poor; (2) control of the public health, vaccination, inspection of school children, inspection of conditions of work in factories and mines, inspection of midwives, etc. Each branch could be regulated, and the board could have a grip of the whole of the work done throughout the country; and men of medical education would be judges as to whether the work done was satisfactory or not, for the simple reason that they possess the knowledge for the exercise of such judgement. The country need not be afraid that by giving such power to a board consisting mainly of medical men it would be creating a group of partisans for the rest of the medical profession, for I venture to think and to assert that there is no body of men that hold a higher ideal of what men owe to themselves, to their neighbours, and to the State than a body consisting of members of the medical profession.

Such in brief is the outline of the reorganization that I would ask you to consider. It is, I think, nothing more than what the country needs, and anything less would, in my opinion, be no gain to the State.

Before I conclude it would be pleasing to me personally to add that, should such a scheme as sketched above come into the range of practical politics, a still wider outlook should not be lost sight of. It is this: The Board of Agriculture is burdened with questions appertaining to veterinary science, just as the Local Government Board is with sanitary science; also with the new science of mycology and all the diseases plants are subject to. Doctors, veterinarians, and mycologists deal with matters akin to one another, and it only wants a big, open mind to see that all three should by co operation be made into one whole.

THE NATIONALIZATION OF MEDICAL SERVICE.

By BENJAMIN MOORE, M.A., D.Sc., M.R.C.S., L.R.C.P.,

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THE ever-increasing amount of service rendered to the State and to our great municipalities by medical men for direct payment opens up a most important question with many vexed issues, both for these public servants belonging to our profession, and for those others who are left in general medical practice paid for privately by the individual.

Increased work ought to mean increased total payment, and should be for the good of the profession as a whole, besides giving greater opportunity for public service, yet many medical men object bitterly to this increasing amount of State work not paid for directly by the recipient.

Many men in private practice cannot see where things are drifting to under present and foreshadowed legislation. They fear pecuniary loss and financial disaster, and hence maintain a stubborn resistance. Others, holding at present more or less well-paid public health or Poor Law appointments, fear displacement or reduction in any rearrangement.

Others, again, foresee in school clinics and improved Poor Law hospitals an unwarrantable extension of the undoubted hospital abuse inseparable from our present inadequate and wrongly administered system of voluntary hospitals, so illegitimately robbing men of their well-established rights.

Now it is of fundamental importance at this juncture that our profession should present as much solidarity as possible in its views, and also that it should convince the thinking public and educated laymen that it intends to do its utmost to further progress and to safeguard as thoroughly as possible both public and individual health.

There can be no possible doubt that in the long run the interests of the public and the interests of the profession are best served by the same common course, if only we can avoid falling out by the way.

We render a great service both to the individual and to the State, which can and ought to be paid for like any other great public or private service. No one questions this, although occasionally dishonest persons or dishonest public boards may attempt to avoid adequate payment. Neither Majority or Minority Report states that the doctor is not to be paid for his work, and it is an open question whether State work on the one hand, or private work on the other, is better paid at the present time.

The all-important question is whether there is to be more or less work to do, and how public servant and private practitioner, or the mixture of both, are to share in it, as to the amount of work allotted to them, and the amount of payment assigned for doing it.

If the work done, whether for State or individual, is paid equally adequately, it surely follows that if the health of every man, woman, and child is completely

attended to in part publicly and in part privately, then there must be more work and more pay for the profession as a whole than there is to-day.

There is not space here to enter upon the grounds of public utility and humanitarianism alike for which it is necessary to reform the Poor Law as a whole and medical service especially in connexion with it, but it may be confidently stated that if the comprehensive scheme of the Minority Report became law, the amount of medical work required—at the commencement, at any rate—would be at least trebled. A rapid decrease, both in public and private work, would follow the establishment of a thoroughly efficient medical service for the poor, on account of the improved public health, and we should all have longer and healthier lives; but a level would never be reached at which fewer doctors were needed than now, under our incongruous, ill-matched systems, often hopelessly opposed to one another, and in which the greater part of the work is left undone or licked over in a way of which any honest craftsman is ashamed.

The various other schemes, such as the Majority Report, all suggest more work than at present, though not so large increases as the Minority Report. Accordingly, whatever change occurs, there is bound to be an increase in the amount of work adequately done, and hence, unless we behave very foolishly, an increased amount of payment to the profession as a whole.

The next and burning question is the distribution of this work and pay, and how the changes are likely to affect present members of the profession. Are they going to be hurt or benefited by this movement? As the dean of a medical school, and in that my special work has brought me in contact for some years with men just graduated and thinking of entering the profession in various capacities, I think I can put forward some facts which may interest the general medical practitioner in this connexion.

In the first place the number of men entering the profession shows no tendency to increase but rather to decrease all over the country. In fact, there has been all the time for the past fifteen years a steady fall in this respect. Accordingly, unless the amount of work is rapidly decreasing, competition between private practitioners cannot be on the increase but rather decreasing, and, other things being equal, the average income ought to be improving. Further, in regard to what specially interests us here—namely, the distribution of work between private practitioner and public servant—if the total number of men entering the profession remains constant, then, whether the income of the private practitioner decreases or increases will ultimately depend upon the relative number of men entering public and private careers as compared with the amount of work taken away from the private practitioner by legislation and placed under public service.

For example, if half the men graduating were accommodated with suitable and permanent berths in the public services, so that only half the number entered upon work as private practitioners, then it is logical and indeed most obvious that half the work could be taken from private practice and put into State practice without affecting the income of the private practitioners in the slightest degree. Further, if the half who entered upon public work undertook chiefly forms of work which had never been done at all before, and so did not take away quite the half of the private work, then there would be more work for each private practitioner to do. Finally, the law of supply and demand would, of course, assert itself, and more men would commence to enter the profession.

It is thus seen that any increased demand for additional work properly paid for by the State will in the transition benefit rather than injure the general practitioner—this, too, excluding any direct sharing in the State work by men already in the profession. If such practitioners are open, as they are, to take a share, the new work becomes more advantageous to them still.

Now, we may ask, How far do these considerations accord with what is actually occurring with regard to the distribution of men entering the profession? In regard to the medical school with which I happen to be connected the answer is perfectly clear. A very considerably increased number of men are preparing for public health appointments. I happen to hold a Research Chair in the University of Liverpool, and until about two years ago I had an average number of between nine and ten young graduates either working on theses for M.D. degrees or visiting my laboratory in the intervals of leisure of commencing practice; during the last two years this number has been reduced to two, and the men who used formerly to come to me are working for the D.P.H., to qualify for the State and municipal work which they clearly see either coming or actually with them. This does not wholly represent the influx of men preparing for public work; other departments in our university have also sent their contributions to the public health laboratory, and the numbers of men now preparing for the D.P.H. are between three and four times as great as they were five years ago.

Nor is this, in my opinion, a temporary state of affairs. The State department of medical work is certain to increase year after year, and I venture to prophesy that within ten years from now over 80 per cent. of the young men in the country qualifying in medicine will be entering upon public health and hospital work for a great national service.

Is this change to be deplored in the interests either of the State or the medical profession? If we look at the subject even from the practical point of view of money earned by each man, I venture to deny it. The present *average* income of the profession lies well below £200 a year. Now, for whole-time service, we can hardly imagine the State offering less to a young graduate than £200 a year as a commencing salary, rising under ordinary promotion to £600 or £800. As a matter of fact, none of the existing services such as the R.A.M.C. or I.M.S. do offer less than about these figures when allowances are added in. But even suppose when the public service is completely organized we start at £150 a year in the junior posts, it goes without saying that the *average* pay will lie a long way above its present value of less than £200 a year.

The only thing present members of the profession have any cause to fear is the transition, and I have endeavoured above to bring forward evidence that this is adjusting itself, and, in my opinion, even over-compensating itself in a perfectly natural way.

A stage will probably never be reached at which the general practitioner will cease to exist; there will always be a large number of wealthy people, of middle class tradesmen, and of better class artisans who will desire to have private advice from their own doctors and pay for it themselves. These are the people who pay and support the private doctor. Even now the State is chiefly taking away the charity and unpaid work done for undesirables, and the State is going to pay for it, so that medical men will no longer have to work for nothing, or a mere pittance. Is this really the curse that some general practitioners have been taught to think it?

Further, by men being drafted off to do this work more room to live is left for the others. This process happens not only in the case of men about to enter the profession, but with men who have been in general practice. This happened recently, for example, in Birkenhead. A medical practitioner of Birkenhead was appointed as schools medical officer, and gave up practice on accepting it. What has happened to his practice? Are the people who used to consult him no longer ill? Of course they are; and now they go to other practitioners, so that this practice is distributed amongst the other private practitioners of Birkenhead. This is happening all over the country, and must benefit private practitioners. Moreover, a great deal of the work is new work for children who were never taken to doctors, but allowed to run on into chronic ill-health, and become charges on the State, in earlier and later adult life.

The general practitioner who has been reading this may say, perhaps, But in many instances he sells his practice, or another man comes and sets up. The

answer to this is that new men buying practices, or coming in and setting up, exist in a definite amount determined by the number entering the profession from the medical schools each year. Accordingly, if a man throwing up general practice goes in for a municipal or State appointment, he takes one off any glut of new men there may be, and, unless the total number entering the profession increases, every man going into State work must inevitably mean one less in private practice somewhere.

Eventually more men will enter the profession as the average income goes up on account of increased public service requiring more men; but until that happens—and it will not happen at once—men already in the profession are going to have a better time of increased incomes, whether they themselves go into State work or not. In other words, even the transition period is going to be advantageous to the profession as a whole, and not deleterious.

There are other advantages which the proposed reform in Poor Law and public health administration must inevitably bring in its train, and conspicuous amongst these is the complete abolition of hospital abuse with the absorption of the voluntary hospital system, which must inevitably occur as the new hospital or infirmary for the poor is brought up to the present level of a good voluntary or charitable hospital. Charity will take the form, probably, of endowing medical and clinical research, while the State will supply one uniform and adequate system of hospitals, open to people with means fixed at a certain maximum level. The work done for these people will be properly paid for by the State to that portion of the profession occupying public appointments. There will be correspondingly less men in private general practice, practising under certainly better conditions amongst people who are able and willing to pay them.

Under such a system hospital abuse cannot exist: in the first place, there are no subscribers to worry both medical staff and lay committee into bowing to demands or supplications from wrongful participants; in the next place the people below a certain standard of means using the State hospitals cease to be a part of the *clientèle* of the private practitioners, who will be less numerous. Such cases will now belong to the men in the State service, who are paid by the State for attending to them.

The advantages to the community of such an adequate national system—in preventing the very poor from infecting other classes with disease and establishing a better national health and sanitation—are too obvious to require elaboration.

Were such a system in existence, legislation could be pushed forward to enable the profession to deal with disease, and especially infective diseases of a chronic type, in a way hitherto undreamt of, and, by complete and efficient segregation, some diseases which vitiate our community and kill off the best of our children and citizens could be entirely swept away, or reduced to such a state of subjection as are at the present time small-pox, cholera typhus, and typhoid.

Can we not, then, seeing that the people's cause is our cause and their service our service, band together to head this movement towards better health and sanitation which social reformers are now leading past us, snatching away the palms which should be ours? Let us be at the head of this movement instead of at the tail of it.

DR. JAMES EDLINGTON MCDOUGALL has been placed on the Commission of the Peace for the City of Liverpool.

THE annual conference of the Child Study Society will take place at Tunbridge Wells on Friday and Saturday, June 10th and 11th. On Friday evening the President, Sir James Crichton-Browne, will deliver an address. On Saturday papers will be read as follows: On the hand as the gate of knowledge, by Sir John Cockburn; on the social life of a child at a co-educational school, by Mr. John Russell, Headmaster of King Alfred School, Hampstead; and on the child as citizen, by Mrs. Higgs. Further information can be obtained on application to Miss F. M. Watt, Honorary Local Secretary, 10, Lime Hill Road, Tunbridge Wells.

GASTROSTAXIS.

BY

W. HALE WHITE, M.D., F.R.C.P.,

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DR. CHARLES BOLTON'S very interesting article in this JOURNAL for May 21st prompts me to give reasons for the belief that the condition of gastrostaxis, or oozing of blood from the interior of the stomach, exists. He, like many others, myself included, has "not the slightest doubt" that there is a disease, occurring chiefly in women between the ages of 20 and 40, characterized by pain, vomiting, and bleeding from the stomach, but he suggests that it is due to acute ulcers. Last year he supported the oozing view, for he said,[1] "Occasionally in young women . . . gastric haemorrhage is seen without any lesion of the mucous membrane being present to account for it. . . . Such cases have also been called gastrostaxis." If the oozing is fatal, minute erosions must occur, for the blood has broken through the epithelium.

Dr. Bolton mentions three cases in which bleeding was due to an acute ulcer, but one was a man aged 49 and another a woman aged 69, so that two of them hardly come within the limits of the disease in question. In the third an ulcer ¾ in. in diameter was found. It clearly could not, after the *post-mortem* examination, be confused with gastrostaxis; in none of these three was there any evidence that the bleeding came from more than a single point. In favour of the belief that oozing or gastrostaxis does exist, I would urge that the blood often in that condition comes from many bleeding points at once. For example, Dr. A. G. Gullan[2] showed at the Liverpool Medical Institution the stomach and intestines of a girl, aged 19, who had had all the symptoms of gastric ulcer, including haemorrhage. No ulcer could be seen in the stomach, but there were numerous small haemorrhagic erosions scattered over its mucous membrane and that of the duodenum and intestines. Dr. Herringham[3] gives a case in which on opening the stomach after death several small areas were seen from which haemorrhage had occurred, but no ulceration. There were also haemorrhagic areas in the intestines.

Turning to cases observed during life, Mr. Eve[4] speaks of seeing inside the stomach "small red points." Mr. Moynihan[5] speaks of "bleeding from many tiny points"; "the mucous membrane weeping blood." In the series of cases I originally collected,[6] in No. 5 blood was seen oozing from three different places. In No. 12 nothing abnormal was seen inside the stomach but a congested patch of mucous membrane. In No. 15 the stomach was deep red all over, with many bleeding points. In No. 16 bleeding points were found. In No. 20, in a small patch the oozing of blood appeared to come from a few minute points. In No. 24 a considerable number of bleeding points were seen. I have notes of a case communicated to me by Dr. A. E. Boycott. The patient, a woman, had two very severe attacks of haematemesis. During the second the stomach was opened and a large area of congested bleeding mucous membrane was seen. No local point of bleeding could be found to tie or excise. I admit that Dr. Bolton says that the finding of multiple bleeding points is no evidence against the acute ulcer view, because acute ulcers are sometimes multiple; but, in the first place, many acute simultaneously active ulcers are very rarely seen at an autopsy, and most of the descriptions which I have quoted, hardly describe active ulcers. An observer probably would not describe acute ulcers as a large area of congested, bleeding mucous membrane. And lastly, the chances that numerous minute acute ulcers would be all quite close to one another and all bleed at the same time must be remote. The opportunities for seeing this oozing from the stomach will become fewer, for surgeons, fortunately, rarely now open the stomach for haematemesis during the attack of bleeding; but I submit that the descriptions I have quoted support the view that oozing occurs.

Evidence from *post-mortem* examinations must be rare, as the condition is seldom fatal; indeed, out of 7,500 *post-mortem* examinations at Guy's I could only find 3 cases that could have been examples of gastrostaxis. Several observers, however, believe that they have seen fatal cases

of gastric haemorrhage in which no trace of an ulcer, chronic or acute, could be found; and although, before the presence of a minute acute ulcer can be denied, much care must be taken, it hardly seems likely that all these observers are wrong. I have seen one fatal case within the last four years. That was a woman who had been in the hospital several times for haematemesis. After death I made a careful examination of the stomach, and neither I nor any one else could see any evidence of an ulcer. Dr. Wilberforce Smith has kindly sent me notes of a similar case, in which he and two other doctors made a most careful examination of the stomach after death, and no ulcer or source of the bleeding, which during life was very severe, could be found. I must, however, admit that in neither case was the stomach photographed or examined microscopically. It is allowed that acute ulcers may form the initial stage of chronic ulcers; but if all the cases which some call gastrostaxis were examples of acute ulcers, we should hardly expect that chronic ulcers would be, as they are, judging by *post-mortem* experiences, equally common in men and women, for the condition described as gastrostaxis is far commoner in women.

From this evidence it seems that some at least of these cases of pain, vomiting, and haematemesis in young women are due to oozing of blood from the stomach, and may therefore be called gastrostaxis. We do not know the cause of it any more than we know the cause of epistaxis in young boys or menstruation in women. There is reason for believing that a similar oozing may take place from the vessels of the kidney and give rise to blood in the urine; probably some of the cases of suspected stone in the kidney in which none is found are instances of this. Several cases have been recorded lately of bleeding from the stomach in association with disease of the appendix, and although this is difficult to explain it is easier to imagine that some toxin from the diseased appendix, acting as an endothelial poison, would cause gastrostaxis rather than gastric ulcer, for we know that in toxaemia associated with disease of the liver (apart from portal congestion) haematemesis may occur without any ulceration of the stomach and rupture of minute gastric vessels is not rare in acute infective process, for of 172 cases of gastric ecchymoses found in the *post-mortem* room at Guy's Hospital in 68 the cause of death was an acute infective process.

My justification for this short note is that it may interest your readers, as Dr. Bolton has given reasons for doubting whether the bleeding was due to gastrostaxis, to supplement him by giving those in favour of that view.

REFERENCES.

[1] C. Bolton, *Clin. Journ.*, March 31st, 1909, p. 392. [2] *The General Practitioner*, December 8th, 1906. [3] W. P. Herringham, *St. Bartholomew's Hospital Reports*, vol. xliv. [4] F. Eve, BRITISH MEDICAL JOURNAL, May 7th, 1910. [5] Moynihan, ibid., January 29th, 1910. [6] Hale White, *Lancet*, November 3rd, 1906.

THE first of a special course of six demonstrations on the surgery of the nervous system will be given by Mr. Percy Sargent at the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., to-day (June 3rd), at 5 p.m. The course will be continued on June 8th, 10th, 15th, 17th, and 22nd, at the same hour.

THE Society of Medical Phonographers offers a prize of one guinea for competition amongst medical students for the best answers to three questions in medicine and surgery which are intended to appear in the August, October, and December issues of *The Phonographic Record of Clinical Teaching and Medical Science* (the organ of the society). The sole qualifications for entry are membership of the Society of Medical Phonographers and ability to *read* shorthand (Pitman's system). Answers to the questions may be sent in in ordinary writing, type-writing, or shorthand, at the option of the candidates. The competition will take place if not less than four student members enter for it. Entries must be received on or before July 7th by the honorary secretary of the society, Dr. A. Hill Joseph, 10, Cantelupe Road, Bexhill-on-Sea, who will be glad to receive applications for membership. There will be no entrance fee. Student members of the Society of Medical Phonographers pay a subscription of 5s. per annum, in return for which they receive the periodical and other literature issued by the society. Members of the profession pay a subscription of 7s. 6d. per annum. It is proposed later to institute another competition in anatomy and physiology.

THE DIFFERENTIAL CUTANEOUS REACTION IN TUBERCULOUS DISEASES.

BY

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AND

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IN October, 1908, Dr. Ladislaus Detre, of Budapest, speaking at the Washington Congress on Tuberculosis, proposed a modification of von Pirquet's cutaneous reaction. He suggested that by applying bovine and human tuberculin simultaneously it would be possible not only to determine the presence or absence of tuberculosis but also to determine whether the bacillus present was of the human or bovine variety.

We have been using this method for about eighteen months, and have now on record the results in several hundred cases. We think it may be of interest to record the first 250 consecutive cases, and to consider what conclusions may reasonably be drawn from the results.

The technique is simple. A 25 per cent. solution of old tuberculin (as prepared by Meister, Lucius, and Brüning) is made up with a diluent consisting of one part of 1 in 20 carbolic acid glycerine and two parts of normal saline solution. The solutions are kept in three pipette stoppered bottles containing respectively the diluent for control, bovine, and human tuberculin.

On the right forearm is placed a drop of the diluent, and at some distance a drop of human tuberculin, and the skin is scarified through each drop with a straight Hagedorn needle. The solutions are then rubbed in with the needle. The left arm is similarly treated with bovine tuberculin. A different needle, which is kept in alcohol, is used for each solution.

If a reaction occur, a small red papule appears in twenty-four hours, increases in size for three or four days, and then gradually fades in about a week, leaving in some cases a slight desquamation or pigmentation. In a few cases the papule becomes vesicular, and in still fewer the reaction is delayed until the fifth or sixth day. The control should show no reaction on the third day.

In analysing the results of the first 250 cases it must be borne in mind that in every case there was some reason to suspect the presence of tuberculosis. Seventy-nine cases were certainly tuberculous, in 42 cases the diagnosis of tuberculosis was highly probable, and in 129 cases there was no evidence of tuberculosis other than the reaction when present.

The accompanying tables (p. 1349) contain an analysis of our results:

1. All cases certainly tuberculous gave one or both reactions, *with one exception*, namely, a case of tuberculous meningitis in which tubercle bacilli were found in the cerebro-spinal fluid. This patient died.

2. Of cases probably tuberculous, one or both reactions were present more frequently where the probability was greater than where the probability was less.

3 In cases suspected of tuberculosis, where there were no definite diagnostic signs, one or both reactions appeared more frequently after the age of 15 years and most frequently in patients over 45 years of age. It is obvious, however, that the probability of any individual being tuberculous increases with his age.

3. In the pulmonary cases, of those certainly tuberculous 2 gave a bovine reaction, and 22 both reactions. Of those almost certainly tuberculous 2 gave a human reaction, 1 a bovine, and 39 gave both reactions. In these two groups, of 66 patients examined 61 gave both reactions, which in 28 cases were equal, in 17 cases the human, in 16 cases the bovine being greater; 2 gave the human reaction only, and 3 the bovine. In all cases some reaction occurred.

TABLE I.—*Pulmonary Cases.*

	Both Reactions Present.			One Reaction Present.		No Reaction.	Total.
	Human Greater.	Bovine Greater.	Both Equal.	Human.	Bovine.		
Definite physical signs; T.B. present	8	4	10	0	2	0	24
Definite physical signs; no T.B., or not examined	9	12	18	2	1	0	42
Doubtful physical signs; no T.B., or not examined	6	3	10	1	1	32	53
No physical signs; no T.B., or not examined	7	7	18	2	1	55	90
Totals	30	27	56	5	5	87	209

TABLE II.—*Miscellaneous Cases.*

Disease.	Both Reactions Present.			One Reaction Present.		No Reaction.	Total.
	Human Greater.	Bovine Greater.	Both Equal.	Human.	Bovine.		
Cervical glands enlarged	5	5	5	—	—	1	16
Laryngo-pharyngitis (tuberculous)	—	4	3	—	—	—	7
Ulceration of nose (tuberculous)	—	—	1	—	—	—	1
Tuberculous peritonitis	—	2	2	—	—	—	4
Tuberculous meningitis	—	—	—	—	—	1	1
Tuberculous dactylitis	—	1	—	—	—	—	1
Lupus	1	—	—	—	—	—	1
Spinal caries	—	—	1	—	—	—	1
Heart valvular disease	—	—	3	—	—	2	5
Tonsillitis	—	—	1	—	—	1	2
Anaemia	—	—	—	—	—	1	1
Syphilis	—	—	—	—	—	1	1
Total	6	12	16	—	—	7	41

TABLE III.—*All Cases in Age-groups.*

Age-groups.	Total.	Definitely Tuberculous.		Probably Tuberculous.		No Evidence of Tuberculosis.	
		Positive.	Negative.	Positive.	Negative.	Positive.	Negative.
0-5	15	1	—	3	—	4	7
5-10	93	24	1	12	1	8	47
10-15	38	12	—	8	2	2	14
15-25	43	18	—	7	1	10	7
25-35	27	9	—	6	—	3	9
35-45	20	8	—	1	—	7	4
45 and over ...	14	6	—	—	1	6	1
All ages ...	250	78	1	37	5	40	89

TABLE IV.—*Percentages giving Positive Reaction in the Three Clinical Groups, arranged according to Age.*

Age-groups.	Definitely Tuberculous.	Probably Tuberculous.	No Evidence of Tuberculosis.
0-5	100	100	36.3
5-10	96	92.3	14.5
10-15	100	80	12.5
15-25	100	87.5	58.8
25-35	100	100	25
35-45	100	100	63.6
45 and over	100	—	85.7
All ages ...	98.7	88.1	31

TABLE V.—*Percentages giving Positive Reaction in Different Age-groups.*

Age-groups.	Total.	Positive Reaction.
0-5	15	53.3 per cent.
5-10	93	47.3 ,,
10-15	38	57.8 ,,
15-25	43	81.3 ,,
25-35	27	66.3 ,,
35-45	20	80.0 ,,
45 and over	14	78.5 ,,
All ages	250	62.0 ,,

General Conclusions.

This reaction is certainly capable of being applied cheaply, safely, and easily by any medical man, and in our opinion, if properly interpreted, it is of great value. Broadly speaking, our interpretation of our results is as follows:

(*a*) Any patient giving either or both reactions is certainly tuberculous, but the reaction gives no indication of the site or activity of the tuberculous lesion.

(*b*) Any patient giving no reaction is certainly not tuberculous, except in exceptional cases of advanced and moribund tuberculosis.

(*c*) In pulmonary phthisis both reactions are usually present. This seems to us to indicate either that the human and bovine bacilli are very closely allied, or, less probably, that both bacilli are usually present. The practical deduction we have drawn is that it is safer to exhibit mixed human and bovine tuberculin in all cases treated with tuberculin. If either is of any value it

will do its work, and the other will, at any rate, do no harm.

The number of cases we give is, we think, sufficient to justify, at any rate, a provisional opinion on the subject, and we have no hesitation in using this reaction ourselves, and recommending it to the profession as a simple and harmless method of obtaining accurate information, which we have found to be of great value in many obscure cases.

A FURTHER CONTRIBUTION ON THE STERILIZATION OF THE SKIN OF OPERATION AREAS.*

BY J. LIONEL STRETTON, M.R.C.S., L.R.C.P.,
SENIOR SURGEON, KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.

MY first communication on the sterilization of the skin of operation areas[1] by iodine was based on an experience of 57 cases. A further experience of 291 cases has increased my belief in the method and enabled me to improve my technique.

In the accompanying table I have added my cases together, so that I can submit a complete list representing the operations I have performed during the last ten months which were suitable for such a preparation. The cases have not been selected; they represent various classes of the community and ages varying from a few days to 84 years.

No. of Cases.	Operation.	Result.	Remarks.
5	Abscess	S.	2 healed per primam.
1	Amputation: hip	S.	Was suppurating.
3	,, thigh	2 P., 1 S.	1 was gangrenous.
1	,, foot	P.	
1	,, hand	P.	
6	,, fingers	P.	
4	,, toes	P.	
14	,, breast	P.	
3	Anthrax	S.	Malignant pustules.
9	Appendix: quiet	P.	
8	,, suppurating	S.	
3	Appendicostomy	P.	
1	Castration	P.	This healed per primam, in spite of secondary haemorrhage necessitating re-opening the wound.
6	Circumcision	S.	
2	Colostomy	S.	
4	Colotomy	S.	
3	Empyema	S.	
2	Epithelioma, lip and face	1 S., 1 P.	
6	Fractures, wired	4 P., 1 S.	1 died (tetanus); 1 compound, some uppuration.
7	Glands in neck	6 P., 1 S.	1 was suppurating.
11	Goitre	P.	1 malignant, died in 48 hours.
1	Harelip	P.	
15	Hernia: radical cure	P.	4 femoral, treated with metal staples.
5	,, strangulated	4 P., 1 S.	1 was suppurating.
4	Hydrocele: radical cure	P.	
1	Ingrowing toenail	S.	Was suppurating.
6	Knee-joint operation	P.	
	Laminectomy	P.	Died within 48 hours
12	Laparotomy: various	11 P.	1 after watery solution healed per primam; abscess followed.
1	,, extrauterine fetation	P.	
3	,, ovarian	P.	
	,, uterine fibroid	P.	
6	,, ventrifixation of uterus	P.	
1	,, nephropexy	P.	
1	Laparotomy: suture bladder	S.	Was suppurating; died.
7	,, gastro-enterostomy	P.	
1	,, perforated gastric ulcer	S.	Died within 24 hours.
1	,, gall stones	S.	
1	,, enterectomy	S.	Died within 48 hours.
1	,, intestinal anastomosis	S.	Died within 48 hours.
6	Mastoid operation	S.	
1	Nerve suture	S.	It had been suppurating; nerve held.
10	Naevus	P.	
3	Osteotomy	P.	
6	Paracentesis thoracis	P.	
3	Plastic operations	P.	
2	Ruptured perineum	S.	Healed per primam.
19	Small tumours; bursa, etc.	18 P.	One suppurated.
5	Sinus exploration	S.	All suppurating.
7	Tenotomy	P.	
1	Tendon suture	P.	
1	Tracheotomy	S.	
2	Trephining	P.	
36	Varicose veins	P.	
1	Varicocele	P.	
272			
	It has also been used in the following cases:		
23	Casualty wounds	S.	In most cases a perfect result; 1 gangrene, 1 tetanus.
27	Injection of antitoxin	P.	
25	Skin grafting	S.	
1	Vaccination	P.	Did not take!
348			

N.B.—In column three: P = perfect; S = satisfactory.

Of the 272 operations some were performed for conditions already septic, but from my experience of similar cases prepared by the former method I have no hesitation in saying that their after-progress was more satisfactory. They are marked as "satisfactory" in the table. Some have healed per primam and are marked "perfect."

I have had only three failures among the clean cases:

CASE I.—The first was an old man upon whom I performed an exploratory laparotomy. He was found to be suffering from malignant disease of the liver, and the abdominal wound was closed. When dressed on the eighth day, it was perfectly healed, and the stitches were removed. Five days later a collection of pus (about two ounces) was found beneath the cicatrix. This case was prepared with a watery solution of iodine, which I was then experimenting with. It is possible the failure was due to that, or there may have been no failure at all, and the abscess may have been due to infection from another source. This appears probable, because the skin wound healed perfectly, and there was no trace of redness about any of the sutures.

CASE II.—The second was the case of a small boy with a mole on his cheek, near the angle of the mouth, which I excised. It is difficult to apply a closed dressing in this situation, and it is still more difficult to keep it dry, in an adult; in a boy it is wellnigh impossible, and I feel satisfied that this was the cause of infection.

CASE III.—The third case is more difficult to account for. The patient was a man, aged 32, whose leg was fractured at football on March 28th by indirect violence. The left tibia was broken obliquely, and an *x* ray photograph showed about ¼ in. separation between the fragments.

On April 2nd I made an incision and fixed the ends of the bone with a screw and silver-wire suture. The operation was quite simple, and was performed in the usual way.

On the fourth day the temperature was raised, but when the wound was dressed it appeared to be all right. By the sixth day there was a decided red blush, which spread with alarming rapidity, and within twenty-four hours reached his groin. He was treated with Bier's congestion and injections of polyvalent serum (B. and W.). On the tenth day he developed signs of tetanus, which increased; he had constant convulsions, and

*Read before the Kidderminster Medical Society.

died on the twelfth day. It is impossible to say how the infection occurred. If it was the fault of any of the preparations it is probable that the cases operated upon at the same time would have been affected. The ligatures used were catgut, prepared after the method of Sir William Macewen.

Suspicion was directed against catgut by Mr. W. G. Richardson in the BRITISH MEDICAL JOURNAL of April 17th, 1909. In the JOURNAL of May 29th, 1909, I reported a case of tetanus which occurred in a man eighteen days after an operation for varicose veins. The wounds had all healed per primam, and I was unable to account for the infection. I feel now, as I felt then, that there is no proof to connect them. The fact that this man was in a poor state, with a mouth full of decaying stumps, may have been, at any rate, a contributory cause.

Two or three other operations were performed the same morning under precisely similar conditions, including the excision from a man's neck of a huge carcinomatous mass, which necessitated the removal of the sterno-mastoid muscle and the deep jugular vein—a large dissection, lasting an hour and three-quarters. It healed up perfectly, and the stitches were removed on the eighth day, and he went home within a fortnight.

Besides septic and clean cases there are a considerable number which cannot be placed in either category. In such cases as appendicectomy and gastro-enterostomy, with the possibility of infecting the wound from the opened viscera, the skin preparation could not be blamed. Fortunately all these cases were successful and can be quoted in support of the method.

In cases such as circumcisions, where it is practically impossible to keep an aseptic dressing applied, healing occurs more quickly and there is less inflammation. Casualty wounds which have all been exposed to infection have in most instances healed perfectly. There were two failures—one a gunshot wound of the thigh which was followed by tetanus, and one a wound into the knee-joint followed by gangrene.

I tried the treatment in one vaccination, and I asked my friend Dr. O. C. P. Evans, the Public Vaccinator, to try it also. Our experience was very similar. It was too effective because it destroyed the lymph and there was no result, in spite of the fact that I allowed the iodine to dry on before performing the operation.

A former house-surgeon informs me that he finds the method useful for sterilizing his fingers in midwifery cases.

In this connexion arise the questions of staining, desquamation, and dermatitis. The staining does not persist, and I find that by the time most operations are completed all the colour has disappeared. If my hands become stained, as they often do, it is easily removed by washing them in a 1 per cent. solution of cyllin (3 per cent. carbolic solution is equally efficient), and towels are cleaned by soaking in a similar solution. There is no desquamation as a rule. I have seen it in one case, due, I think, to the solution being too strong, owing to exposure during a long operation and consequent evaporation. It should always be stored in a stoppered bottle, and only sufficient for use poured out. I prefer to use it direct from a wide-mouthed bottle. It can be applied with a sterilized swab or brush.

I am informed by several members of the profession that they are familiar with cases of acute dermatitis following the application of tincture of iodine, but personally I have not come across one. I have never heard any complaint of pain, and one house-surgeon who applies it freely to all casualty wounds informs me that there is no complaint.

My experience is that it is absolutely unnecessary to shave the skin, and this is an important advantage. Of all the preparations a lady has to undergo prior to an abdominal operation the shaving is the most repulsive, and during the period of convalescence the irritation of the growing hair causes great discomfort.

The only disadvantage I have discovered is lacrymation, to which some assistants are more susceptible than others. The tincture made with rectified spirit is far less irritating than that made from methylated spirit, and can be tolerated by most people. I still use the methylated spirit solution for the primary painting, which is performed immediately before the patient is anaesthetized. The second painting is done with the tincture when anaesthesia is complete, and the final when the operation is finished, with methylated. The tincture is of course suitable for all these purposes, but the increased cost is a factor which has to be considered in hospital administration. To prepare a patient properly by my former method necessitated at least three days' residence in hospital prior to an operation. It occupied the house-surgeon or a nurse for periods varying from one to several hours, and besides all the chemical materials, at least two sets of aseptic dressings were required. The cost to the hospital on each case was considerable. On a large number a good round sum is saved in a year. What is still more important, the patients are saved the misery caused by these preparations. What is most important is that it is an efficient and reliable method, and the surgeon can always be certain that it has been thoroughly performed.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, 1909, ii, p. 368.

THE SCIENCE COMMITTEE OF THE British Medical Association.

REPORT CXXII.

A SOURCE OF FALLACY IN COUNTING RED CELLS.*

BY CECIL PRICE JONES, M.B.

(From the Pathological Department, Guy's Hospital, London.)

IT seems desirable to record some observations in connexion with red cell enumeration and the estimation of colour index, from which it is clear that the employment of Toisson's fluid for red cell counts is apt in some anaemic conditions to give very fallacious results.

I have prepared Toisson's fluid according to the following receipt: Distilled water, 160 c.cm; glycerine, 30 c.cm.; sodium sulphate, 8 grams; sodium chloride, 1 gram. To the completely dissolved mixture I have added a few drops of a saturated aqueous solution of methyl violet to obtain the desired tint.

When counting the red cells of a rabbit which had been bled from the auricular vein on three successive days, I noted that the field contained, besides the usual red cell appearances, a number of very pale red cells, many of which were very difficult to see and readily escaped being counted, the result being an erroneously low red cell count and a correspondingly raised colour index. The number of these pale cells was increased with the interval of time after the mixing of the blood and Toisson's fluid in the counting chamber, and many cells became quite invisible with any ordinary methods of illumination.

The phenomenon was absent from normal rabbits' blood, but was observed in the blood of rabbits which had received phenylhydrazin subcutaneously. Table I gives some examples of this.

TABLE I.

Nature of Case.	Hb. per Cent.	Red Cells per c mm.		Toisson per Cent of Hayem.	Colour Index.	
		Toisson.	Hayem.		Toisson.	Hayem.
Rabbit X (normal) ...	69	5.49	5 61	98	0.63	0.61
Rabbit X after phenylhydrazin	32	1.20	1 60	75	1.34	1.0
Rabbit 27 (normal) ...	80	6.63	6 03	110	0.60	0.66
" " ...	78	6.47	6 49	100	0.60	0 60
Rabbit 27 after phenylhydrazin	34	1 34	1.92	70	1 30	0.89
" " "	50	2.09	2.60	80	1 25	0.96
Rabbit 29 (normal) ...	84	7.05	7.06	100	0 6	0.6
" " ...	86	7.27	7 07	103	0 59	0 60
Rabbit 29 after phenylhydrazin	28	1 06	1.49	71	1 3	0 96
" " "	38	1 53	2 11	72 5	1 26	0 90
" " "	48	1.93	2 40	83	1 23	1.0

* Towards the expenses of this research a grant was received from the Science Committee of the British Medical Association.

The phenomenon was found to occur in several cases of human pernicious anaemia, and one case examined of anaemia from malaria, but it was absent or only existed to a very slight and negligible extent in normal human blood, and was not noted in single cases of chlorosis, scurvy, or rectal haemorrhage, and was absent also in one case of pernicious anaemia.

Table II shows examples of these counts.

TABLE II.

Nature of Case.	Hb. per Cent.	Red Cells per c.mm.		Toisson per Cent. of Hayem.	Colour Index.	
		Toisson.	Hayem.		Toisson.	Hayem.
Normal man	96	4.78	4.82	99	1 01	1 0
„ „	94	4.66	4.75	98	1 01	0.98
„ „	100	5.56	5.78	96	0 90	0.86
„ „	102	5.86	5.93	98	0 87	0.86
Pernicious anaemia (1)	23	0 61	0.86	71	1.8	1 3
„ „ (2)	35	1.06	1 52	70	1 65	1 16
„ „ (3)	58	2.37	2.76	85	1 2	1.05
„ „ (4)	40	1 36	1 32	103	1.50	1.53
„ „ „	42	1.35	1 40	96	1.53	1 50
Malarial anaemia ...	62	2 98	3.55	84	1.0	0.8
Chlorosis	60	4.33	4.23	102	0.69	0.71
Scurvy	66	3.82	3 90	97.9	0.86	0 84
Haemorrhage from rectum	82	4.92	4.99	98	0 83	0 82

To obviate this production of pale red cells, Toisson's fluid was replaced by Hayem's solution, which was prepared according to the following receipt: Distilled water, 200 c.cm.; perchloride of mercury, 0.5 gram; sodium sulphate, 5 grams; sodium chloride, 1 gram. The phenomenon now no longer appeared.

Toisson's fluid does not haemolyze the red cells, as may be shown by adding normal and anaemic blood to Toisson's fluid in bulk and subsequently centrifugalizing. The pale cells seem to have acquired a refractive index identical with the solution, and thereby to have become invisible. It is suggested that the cells having this character are new formed cells, and that it may be possible from this observation to estimate the rate of regeneration of red cells in these anaemic cases.

It is, however, manifest that Toisson's fluid, as prepared above, is apt to give very unreliable and fallacious results, and should not be used for counting red cells, unless a control is simultaneously made with Hayem's solution.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF PROLONGED ABSTINENCE.

A WOMAN, aged 66, was seen by me on March 18th last. She complained that "for three days she had not been able to keep anything down." Examination disclosed a cancerous mass in the rectum. Matters were fully explained to her and her husband, but she deliberately refused all operative treatment from the first visit, and towards the end declared she did not regret her decision. She died on May 10th.

There was complete stoppage of the bowels throughout the duration of the case, nothing passing but a little foul discharge.

Vomiting took place after the drinking of even a mouthful of fluid but at no other time. The abdomen became distended but caused her very little distress. Occasional pains in the back were relieved by hypodermic injections of morphine, and during the last month these were given every six hours. She became very emaciated and developed a bedsore over the sacrum. Her mind was clear all through and she recognized and talked to her son five minutes before she breathed her last.

For fifty-six days she had been absolutely without food and, one might add, drink, as everything in the way of fluid was always immediately rejected. This period seems to be about the limit to which life may be prolonged during complete abstinence. Drs. Guy and Ferrier mention a case of voluntary starvation which lasted sixty-one days, but this person took water and lemon juice at intervals, whereas in my case the abstinence was complete. Considering the presence of the cancer and the bedsore, one must regard this case as remarkable and unusual.

West Mersea, Colchester. B. HALL, M.B.Lond.

UNITED FEMALE TWINS.

IN the BRITISH MEDICAL JOURNAL of April 30th, 1910, p. 1050, Surgeon R. M. Riggall, R.N., gives an interesting account, with a photograph, of a case of united male twins, possessing a common rectum and anus, which he considers unique. When on the Malabar Coast of India, I was given the accompanying photograph, with a full account in pencil, by the native photographer who took the picture. It shows two female infants, united to one another in a very similar manner to the case recorded, possessing a common anus and vulva (common cloaca); but the exact anatomical relations of the vaginae and urethrae are not known to me, as I did not personally see the twins. (The original photograph shows the infants sitting on their maternal grandmother's right hand, the grandmother merely wearing a loin cloth, as is the custom with women in those parts.) These twins were born on September 22nd, 1906, to respectable local native parents, who exhibited them for money, and in this way are said to have made a good deal, since over 400 persons visited them daily in connexion with a superstition of a "devil's birth," for they were born in a locality called "Bhootapara" or Devil's Rock, which is believed to be haunted. The twins, I have heard, are no longer living.

Newport, Mon. D. G. CARMICHAEL, M.B. (Capt. R.A.M.C.).

PRACTICAL POINTS IN THE TREATMENT AND CLINICAL HISTORY OF SYPHILIS.

To the excellent article on syphilis by Dr. Coates in the JOURNAL of May 7th, page 1093, the following facts may be added: that a woman may develop a primary sore from a syphilitic man who has no cutaneous lesion.

CASE I.—A man, aged 30, contracted syphilis two years before his marriage; he underwent only about six months' treatment. I saw him just before he married. He was free from all eruptions—no sore throat nor white patches in the mouth, no sores on the genitals, no sign of gonorrhoea. He married against my advice. A few weeks after the marriage his wife came to see me, complaining of vaginal discharge. I could find nothing to account for it but a hyperaemic patch at the posterior fourchette; no induration. I advised her to use some disinfectant. A fortnight later this hyperaemic patch was showing signs of erosion, but as yet no induration. I forgot to notice

particularly the condition of the inguinal glands at this stage. In another fortnight the patch had formed an eroded ulcer, the size of a shilling, with indurated floor and edges, and the inguinal glands were the size of walnuts, but painless. She developed secondaries and sore throat later, and was under my treatment for nearly a year, when she moved out of the neighbourhood.

CASE II.—A woman, aged 21, living under the protection of a gentleman of whose history I knew nothing at the time came to me complaining of vaginal discharge, and swore there was nothing wrong with her "husband." When I examined her there was a hyperaemic patch similar to that seen in Case I. There was no induration, but the glands felt slightly nodular. My suspicions were aroused, owing to the previous case. When I saw her a fortnight later the patch was eroding, but there was no induration, and nothing to draw attention to it, but the patient had been scratching herself, which gave the outside vulva an itchy appearance. She was taken by her "husband" to a physician in Harley Street, who said she was suffering from itch, and advised her to use sulphur ointment, and certified that the husband was free from any venereal signs. She came to see me again six weeks afterwards, when I found a well-marked eroded ulcer where the patch had been, with indurated edges and floor; the inguinal glands were painless but the size of walnuts. She subsequently developed secondaries, and was treated at the Lock Hospital. When the nature of the complaint became manifest beyond the shadow of a doubt, her "husband" confessed he had syphilis six years ago.

I have no doubt the converse is also true—that is, a man may develop a primary sore from a woman who has no cutaneous lesion, but unfortunately in these cases I have not had the opportunity of examining both parties at the same time.

The above cases also illustrate the fact that a syphilitic subject is infective in the latent stage; but this is by no means always true.

CASE III.—A man contracted syphilis twenty years ago and had treatment for it. He afterwards married and had a family of six, all living and perfectly healthy. His wife was quite healthy and never aborted during this period. Two years ago he came to me with tertiary sores on the right shin, and soon afterwards I had to attend his wife for an abortion, and again in a few months' time she aborted. She aborted a few weeks ago a third time. As she began aborting after the husband developed tertiaries it is perfectly certain that she was not infected before the appearance of tertiaries in the man, and consequently the children have no hereditary taint. The explanation forces itself on one's mind that during the latent period the germs had probably lodged in some tissue, probably nervous, and that the blood was then free from them. When they again gained access to the blood, as evidenced by the tertiary sore, the infective character of the man asserted itself.

CASE IV.—A man consulted me about his wife who had developed a nodal swelling on the left clavicle. I noticed at the same time that he had an eczematous eruption on the scalp and the back of the neck. The eruption had appeared six months previously. He said he had suffered with a sore on the penis about fifteen years earlier, that it was cured after a few weeks' treatment, and that he neither had rash nor sore throat after that, and was free from any venereal sign, till this eczematous eruption appeared. He had been married nearly twelve years and his wife never aborted nor showed any signs of eruption till this swelling came on a few weeks back. He has four children who look perfectly healthy. Here, again, one cannot but conclude that as the germs found their way into the circulation, as was shown by the eruption, the wife became infected, but not before. As she had no abortions and the children are quite healthy, it would be interesting to know whether the wife will miscarry after this. Under treatment by mercurials and potassium iodide the wife's node and the husband's skin eruption have disappeared.

That syphilis can be contracted a second time is now beyond all dispute; I have within the limit of my by no means large practice come across two instances.

D. N. COOPER, L.R.C.P., M.R.C.S.Eng.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GOVERNMENT CIVIL HOSPITAL, KANDY, CEYLON.

A CASE OF STRANGULATED INGUINAL HERNIA WITH APPENDICITIS: OPERATION: HERNIOTOMY: APPENDECTOMY: RECOVERY.

(By F. R. BARTHOLOMEUSZ, L.R.C.P. and S.E., etc., House-Surgeon.)

IN the BRITISH MEDICAL JOURNAL, vol. ii, 1908, p. 260, Dr. Horace Brown, Assistant Surgeon, Tredegar Hospital, related a case (in a female) in which the appendix, "much thickened by the formation of young fibrous tissue outside the muscle coat and in the mesentery," was removed from the sac during an operation for strangulated hernia. The following case is an instance of a similar occurrence in the male:

A fairly well-nourished Cingalese, aged 40, was brought in a rickshaw to hospital at 7.30 p.m. on February 2nd, 1909. He was a vegetable seller, and stated that he had suffered from a reducible inguinal hernia on the right side for about five years. He had walked that morning a distance of about five miles with a bag containing 150 oranges on his head, and on arriving at the market-place at about 2 p.m. he felt a sudden pain in the right groin, and found that he could not replace the hernia. He complained of severe colicky pains in the right groin. He gave a history of constipation. The temperature was subnormal, the pulse 100 and of fair volume; the tongue was dry and coated, and he complained of thirst and nausea. In the right inguinal region was a large, well-defined mass, very painful to touch ("cutaneous hyperalgesia") and resonant on light percussion. The muscles of the abdomen were rigid and the right leg flexed.

I diagnosed the condition to be one of strangulated hernia. He was given an enema in the ward, and brought to the operating theatre at 8.30 p.m.

Chloroform was administered by Mr. Dharmaratue, the apothecary. An incision about 3 in. long was made over the swelling, which was oval and about the size of a large orange. The coverings were divided and the sac, which was surrounded by many adhesions, was opened. Its contents were the ascending colon, caecum, and appendix; there was also a certain amount of turbid fluid with lymph exudation. The constricting band at the neck was divided, the gut was examined and bound, but the appendix was reddened and inflamed.[1]

I protected the bowel by a sterilized mop rinsed in warm saline solution, and having divided the meso-appendix after ligaturing its vessels, I removed the appendix in the manner described by Rose and Carless. I then replaced the viscera and treated the case as an ordinary hernia by means of Fergusson's method, the cord not being interfered with. Finally, the muscular aponeuroses were united, and the skin flaps brought together by interrupted silk sutures.

The sutures were removed on February 10th. The wound healed by first intention, and the patient was discharged on March 4th, one month after the operation.

I must express my gratitude to Mr. Dharmaratue, the apothecary, for his assistance, and to Dr. Allan de Saram, the medical officer in charge, for having given me the permission to report this case.

[1] Appendicitis within a Hernial Sac. Thompson and Miles's *Manual of Surgery*, p. 386, vol. ii, 1904 edition.

THE Managing Committee of the Sleeping Sickness Bureau have received from the Agent-General for the Transvaal the sum of £500 as a contribution to the funds of the Bureau made by the Transvaal Government on behalf of the four South African Colonies.

Reports of Societies.

OXFORD MEDICAL SOCIETY.

Friday, May 27th, 1910.

Dr. JAMES NEIL, President, in the Chair.

THIS meeting was held at Littlemore Asylum, the following being among the exhibits:—Dr. GOOD: Three cases of general paralysis of the insane in women, aged 36, 36, and 35 respectively. None of the patients had any grandiose ideas, and all belonged to the demented type. Two had increased knee-jerks, in 1 they were absent. Dr. GREENWOOD PENNY: Two cretins, aged respectively 19 and 41. The first was extremely demented, deaf and dumb, and showed a very marked cretinous condition, which, with thyroid treatment for two months, was beginning to yield, and the mental condition to improve. The second case was in a condition of mild dementia with delusions. This case was also improving on thyroid treatment. Dr. WOOLFE READ: A case recently in the Radcliffe Infirmary, where he had been admitted for severe mental symptoms, extensive muscular weakness and some sensory disturbance. On admission to Littlemore Asylum he had dementia, some delusions of grandeur, absolute inability to walk, and marked incoordination of all movements. The condition at the present time was one of general paralysis of the insane, of the ataxic type. Dr. GOOD, in a paper on *Alcoholic insanity*, in speaking of causation, mentioned the discrepancy between the statistics given by various authorities, which varied from 41.3 per cent. (Clouston) to 3 per cent. (Turner). This was probably due to the attitude of the observer towards alcohol and possibly to local peculiarities. The hereditarily weakened person was more prone to alcohol than another, and the quality of the alcohol drunk by large sections of the community at the present time was probably inferior to that drunk in earlier times. Alcoholic insanity occurred between 25 and 30 and 35 and 40, the period, in the first case, of the necessity for a stimulus, and, in the second case, of the beginning of mental deterioration in certain individuals. Gastric disturbance and carious teeth were factors among the poorer classes, and habit, especially in rural districts, was probably an important factor. In respect of symptoms, the aspect, the tendency to steppage or waddling gait was mentioned; reflexes were exaggerated or diminished. The pupils showed no constant change. Muscular tremor was always present and sometimes marked. Owing to neurotic disturbances, anaesthesia and hyperasthesia were nearly always present. Among mental symptoms the will, judgement, consciousness, and memory were weakened. Impulsive acts, often homicidal, were the most dangerous symptoms. Hallucinations were common, nearly always of a terrifying or disgusting nature, and to be attributed probably to neurotic disturbances in various organs. Delusions were similarly of an unpleasant character to the patient. Epileptic attacks were frequently seen in the chronic alcoholic. The reader divided alcoholism into the following types: (1) Acute—(*a*) delirium tremens, (*b*) mania a potu, (*c*) melancholia; (2) chronic—(*a*) delusional insanity, (*b*) Korsakow's disease, (*c*) dipsomania. The prognosis was always grave, and the treatment could only be successful if undertaken in some institution where the patient could be protected from allowing his vice to be an injury to himself. As regards medicinal treatment, the reader emphasized the value of capsicum and nux vomica for the digestive symptoms, and hyoscine for maniacal symptoms or great excitability.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Friday, May 6th, 1910.

Dr. NEVILLE WOOD, President, in the Chair.

Scarlet Fever.

IN a paper on scarlet fever Dr. F. G. CROOKSHANK insisted on the importance of recognizing clinically the mixed infections and of differentiating between cases of pure scarlet fever, of all grades of severity, on the one hand, and, on the other, those associated with streptococcal, diphtherial and rheumatic infections. Cases of so-called scarlatina rheumatism were usually truly rheumatic in nature, and it was advantageous to treat all cases of scarlet fever with salicylate or salol in full doses from the first. This plan has been adopted at the Mortlake Isolation Hospital for several years with excellent results. Medical asepsis should be adopted in dealing with scarlet fever, whether in private or hospital practice; it would do away with cross infections, subinfections, and "complications" due to secondary septic infection of varying nature. Dr. NEVILLE WOOD thought that no case had been made out for the transference to a public or semi-public institution of patients able to command efficient nursing in their homes. He had never known infection to spread in such circumstances. Dr. T. R. ATKINSON said that when acting as referee in the last small-pox epidemic it had never happened to him to see a case of small-pox which could have easily been mistaken for scarlet fever, but he had found difficulty when cases of measles were about. As to sequelae, kidney troubles were the most to be dreaded. Dr. E. A. SAUNDERS agreed with the probable identity of scarlatinal rheumatism and acute rheumatism. Dr. G. S. HOVENDEN doubted if infection lasted six weeks in the absence of peeling and discharge from nose or ears, and hoped that at some future time a test as to infection would be evolved so that each case might be treated on its merits. He still believed in the advantage of inunction with eucalyptus oil. Mr. BISHOP HARMAN asked if Dr. Crookshank had made any observations on the effects of scarlet fever upon the eyes of his patients. He discussed the recent work of Dr. Tarantas in Constantinople on what he had named "Kératite superficielle exanthématique." In the London County Council Blind Schools he had had patients who had lost their eyes from intercurrent inflammation when under treatment for scarlet fever.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, May 6th, 1910.

Dr. J. B. HELLIER, President, in the Chair.

MR. ROBERT BEATTIE, in a paper on *Congenital talipes*, summed it up as being due to a perverted nerve habit, initiated *in utero*, the result of maternal impressions in a highly sensitive mother. A nerve habit could only be overcome by persistent opposition; and, in opposition to the opinion of recognized authorities, he held that operative measures and the use of irons were rarely required. Mr. MICHAEL TEALE, in a paper on *Prescribing and wearing glasses*, pointed out that in many cases the estimation of refraction was difficult, partly because the methods available were not exact, partly because the patients themselves happened to be peculiarly intolerant of the optical defects of lenses. Often it was only by averaging the results of several different methods of examination that the margin of error could be reduced to reasonable limits. Certain faults in the making up of spectacles were capable of causing discomfort, even though the prescription for the lenses was correct. Among these were unintentional decentering, both optically and geometrically, together with undesirable prismatic and astigmatic effects. Dr. E. O CROFT: A uterus, with a fibroid undergoing *Red degeneration*, removed from a woman, aged 40, who had borne two children. Menorrhagia, pressure symptoms, and recently much tenderness had been present. There was a large parovarian cyst on the left side. The fibroid, situated in the posterior uterine wall, was spherical; on section, its central portion showed deep red coloration, extending in a star-like manner towards the periphery. Microscopic examination showed some degeneration of the myofibromatous tissues, together with thrombosis of the smaller vessels. Dr. T. CHURTON: A man, aged 40, with paralysed right face and arm. On April 22nd, seven days after the onset, the right orbicularis oculi was completely paralysed; it was now acting in conjunction with the left, but not singly. The leg was not paralysed. The patient could repeat quite clearly words and short phrases, but answered questions unintelligibly. Mr. H. LITTLEWOOD: An appendix containing a large number of gun-shot. Mr. B. G. A. MOYNIHAN: A specimen from a nephrectomy for a tumour accompanied by continuous haemorrhage; the kidney was found to be completely disorganized, owing to

a silk ligature. Mr. H. COLLINSON: An ovary and twisted Fallopian tube, from a congenital inguinal hernia in a patient aged 6 months. Mr. L. R. BRAITHWAITE: An hour-glass gall bladder containing stones in the proximal and muco-pus in the distal compartment; it had been removed from a woman, aged 40, who for the last five years had been treated as a case of "neuralgia" of the stomach.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, May 25th, 1910.

DR. BYROM BRAMWELL, President, in the Chair.

THIS was a clinical meeting, the following being among the exhibits: Dr. J. S. FRASER: (1) A case of chronic *Suppurative otitis media*, complicated by septic thrombosis of the jugular bulb and internal jugular vein. The vein having been ligatured, the ordinary radical mastoid operation was rapidly performed. The result was recovery with good hearing in the affected ear. (2) A case after *Killian's operation* for frontal sinus suppuration, with a good cosmetic result. Dr. DAWSON TURNER: A case of rodent ulcer in course of *Radium treatment*, illustrating a healthy radium reaction, the ulcer being covered by a thick impetiginous crust; and two cases of naevus improving under the same treatment. Dr. CRANSTON LOW (for Dr. NORMAN WALKER): A case of port-wine naevus, undergoing atrophy from application of CO_2 *snow*. Dr. GEORGE MACKAY: A case of *Spring catarrh* showing improvement under radium application. Dr. LOVELL GULLAND: Two cases of *Leukaemia*. Both on coming under observation showed a low leucocyte count, about 10,000 per c.mm. Under treatment—arsenic and *x* rays—the leucocytes in both cases steadily increased. In the first case they reached a maximum of 129,000 per c.mm., and then receded to 60,000 per c.mm. The blood film showed it to be a spleno-medullary leukaemia, the primary low count being due to an intercurrent influenza. In the second case the leucocytes had increased to 72,000 per c.mm. This was possibly a case of leukanaemia. Dr. R. W. PHILIP: A case of *Diabetes mellitus* in a young girl, in which the "massive saline" treatment lately introduced in Paris had been adopted. For four periods, each not exceeding three days, and extending over six weeks, the patient drank nightly a bottle of "Hunyadi Janos" water, the diet during the period being limited to one pint of milk daily, well diluted. There was no excessive purgation. The sugar dropped immediately, almost to zero, and sometimes actually to it, and then rose to a point much below the original standard. Symptoms of acidosis present before, acetone and diacetic acid in the urine, had entirely disappeared, and the patient had gained a stone in weight. Dr. A. BRUCE: (1) A case of injury to the spinal cord, accompanied by *Ischaemic paralysis* of one arm, due to the patient lying on it. (2) A case of chronic internal *Hydrocephalus* following meningitis. An *x*-ray photograph showed commencing separation of the frontal and parietal bones. The PRESIDENT: A patient who first had symptoms of intermittent *Claudication of the arteries* of the lower limbs. Gangrene supervened in the right leg, necessitating amputation. Early signs of gangrene were now showing in the big toe of the other foot, and no arterial pulsation was palpable at the ankle. In this, as in most other similar cases, there was no history of syphilis. Professor CAIRD: (1) A case in which *Multiple chondromata* (277) were removed from the hip-joint. (2) A case of severe colitis cured by *Appendicostomy* and irrigation of the lower bowel by weak protargol solution. (3) A series of cases of *Excision of one half of tongue* for epithelioma. In most, Butlin's operation on the cervical glands had also been done. The oldest was now three years after operation. None showed recurrence. Mr. COTTERILL: (1) A case of proptosis of the right eye after a fall, giving the signs of an *Arterio-venous aneurysm*, involving facial and ophthalmic vessels, and cured by ligature of the common carotid artery. (2) Two cases where decompression of the brain (after Cushing) was done for suspected brain tumour, with marked improvement. Professor ALEXIS THOMSON: (1) A patient on whom *Transperitoneal ureterotomy* was done for a calculus detected by *x* rays. (2) A series of cases of *Facial paralysis* in all of which reaction of degeneration had been present, and in which facio-hypoglossal anastomosis had been performed, showing various stages of recovery. Mr. C. W. CATHCART: (1) A case of *Catarrhal appendicitis* without peritonitis, in which the leading symptoms were severe pains in the back (right side), and in which local tenderness was very slight. (2) A case of very severe cut throat, with complete severing of larynx and pharynx, resulting in recovery, but with almost complete obliteration of the laryngo-pharyngeal passages. Mr. STRUTHERS: A patient showing no sign of recurrence after the removal of a *Spindle-celled sarcoma* of the brain twenty-four years ago. Mr. D. WALLACE: A child after nephrectomy for a large sarcoma, probably growing from the suprarenal capsule. Mr. MILES: (1) A case of *Acute osteomyelitis* of the spine in a boy of 10. (2) A case of syncope during an abdominal operation in which cardiac contractions were reduced by gentle *Massage of the heart* from the under surface of the diaphragm. Mr. G. CHIENE: A man, aged 52, with *Chronic osteomyelitis* of the femur, the first acute attack occurring forty years ago, sinuses opening intermittently ever since.

ROYAL SOCIETY OF MEDICINE.

SECTION OF LARYNGOLOGY.

Friday, May 6th, 1910.

DR. DUNDAS GRANT, President, in the Chair.

THE following were among the specimens and cases shown: Mr. HERBERT TILLEY: A *Foreign body from the gullet* of a girl aged 14. It was a penny, which had lain thirteen days just below the cricoid region of the oesophagus. The mucous membrane around the penny was very congested, and in parts slightly ulcerated. The penny was removed, but with difficulty, with a Killian's long-toothed forceps. The patient left the hospital four days later. Dr. H. J. DAVIS: (1) Case of entire *Excision of the tongue* in a man aged 45. The tongue was removed by Mr. Armour in 1909, and opinions were solicited as to the possibility of an artificial tongue being worn. He was well, and could speak volubly, but not very intelligibly. He pronounced "f" like "th." He could not bite properly, and lost his food, as he never knew where it was in his mouth, but both food and liquids went down the right way. The general opinion of members was that a rubber tongue or plate was not very practicable. (2) A man with a large *Venous angeioma* implicating the left tonsil and lateral pharyngeal wall; also a large vascular swelling on the neck of the same side. When the patient lowered his head the tumours at once distended, and evidently communicated. Mr. CHICHELE NOURSE: A case of *Epithelioma of the larynx* in a man, aged 69, shown fourteen months after operation. A red growth occupied the anterior two-thirds of the left vocal cord. Thyrotomy was performed on February 18th, 1909. The left vocal cord, ventricular band, and arytenoid were removed. Recovery was rapid; the patient still remained well, and had gained flesh. Dr. STCLAIR THOMSON: Two cases of radical *Frontal sinus operation*, to show the condition nine and sixteen months respectively later. Killian's method was carried out on the frontal sinus, and each patient also had an endonasal operation for suppuration in the ethmoid cells and maxillary antrum. The former headache had, like all the other symptoms, disappeared, the patients now enjoying perfect health, never requiring a nose wash, since there was no trace of purulent discharge in the nasal chambers. Dr. DUNDAS GRANT: A case of *Odynphagia* in a tuberculous woman aged 35, without any obvious disease of the larynx. There was loss of voice, severe pain running up to the left ear during swallowing, and some ill-defined oedema on the outer surface of the aryepiglottic fold. Otherwise the larynx was normal in appearance, as also the movement of the vocal cords. Dr. ARTHUR EVANS: A man aged 40, with *New growth*, probably malignant, invading the right tonsil, soft palate, lateral pharyngeal wall, inner surface of the angle of the lower jaw and adjacent portion of the tongue. The case was shown to invite suggestions for treatment.

SECTION OF DISEASES OF CHILDREN.

Friday, May 27th, 1910.

Dr. WALTER CARR in the Chair.

THE following were among the exhibits:—Dr. PARKES WEBER: A case of *Ateleiosis* in a man now aged 42, whose physical development was said to have been arrested at the age of 9, and had that appearance. His expression, the wrinkles on his face, his attitude, his manner of speaking, and his general behaviour were, however, those of an adult. Mentally he seemed normal. Skiagrams of the extremities showed persistence of some of the epiphysial cartilages, but the amount of union with the diaphyses varied considerably in different bones. There was no history of any similar condition in the family. Dr. WALTER CARR: A case of possible *Myositis fibrosa* in a girl aged 4½. There are three other children in the family, all healthy. The child began to walk when 16 months old, but six months later was unable to walk or stand. Two years ago her arms became weak, and now she could not fully extend either the hips or the knees; there was no limitation of flexion, but abduction of the hips was much restricted. The left arm could not be completely supinated. There was no pain on movement, nor rigidity of muscles. The mental condition was normal. Skiagrams showed no definite evidence of bone disease, nor any ossification of the muscles. Dr. CAUTLEY thought the condition analogous to the contracture of limbs seen in prolonged toxaemic conditions where the patients were confined to bed. Mr. LOCKHART MUMMERY took a similar view of the case, and advised treatment by means of weight extension over a prolonged period. Dr. BELLINGHAM SMITH: A case of *Amaurotic family idiocy* in an infant aged 11 months. The symptoms had only been noted one month. There were no voluntary movements of the trunk, and only limited movements of the limbs in which a variable degree of rigidity could be detected. Dr. WHIPHAM: (1) A case of *Congenital malformation of the heart* in a child aged 1¾ years. It also had showed congenital ptosis of both eyelids. (2) A girl aged 18 with congenital *Pulmonary stenosis*. Apart from cyanosis and shortness of breath she had no other cardiac symptoms. Dr. FRANCIS HAWKINS quoted a corresponding case which had been kept under observation until the patient was 21. Dr. WHIPHAM: A case of *Air swallowing* in a boy aged 12. There was a habit of continuous forced eructations. The abdomen was not enlarged. The patient had suffered from a similar condition two years previously. Dr. HILDRED CARLYLL exhibited a *Sarcomatous tumour* removed from a girl aged 2, admitted to the hospital suffering from distension of the abdomen, dating from six weeks prior to admission. On laparotomy the tumour seemed irremovable, but *post mortem* it was found to be attached only by a few adhesions to the bladder, and by a branch of the left common iliac artery, and a thin peritoneal covering. It weighed 6½ lb., and was a myxo-sarcoma.

FROM a list contained in the annual report of the New Hospital for Women, Euston Road, N.W., we gather that there were at the beginning of this year as many as 476 registered medical women resident in England, and that of these 103 are or have been married. The New Hospital is a general hospital for women and children containing sixty beds. All the twenty-six members of its active staff are ladies.

THE authorities of the Factory Girls' Country Holiday Fund are appealing for early support this year. The object of the fund is to assist young women employed in factories in London to get a country holiday at such time of the year as they can best afford to leave their work. The greater majority go only for a week. They are housed with cottagers and other persons with whom the fund has made arrangements, and pay part of their expenses themselves. Last year 4,780 were enabled to take this beneficial little holiday, providing themselves about two-fifths of the whole income of the fund for the year. Every girl who has once been away tries to go again, saving up her money for the purpose, so that the fund is esteemed to have a moral as well as good physical influence. The fund is at present overdrawn. The secretary is Miss Canney, St. Peter's Rectory, Saffron Hill, E.C.

Reviews.

THE LAWS OF HEREDITY.

THIS work by Dr. ARCHDALL REID on *The Laws of Heredity*[1] is exceptionally interesting and important, and will surely be of permanent value. It is pre-eminently the scientific method of inquiry insisted on by the author, and his strict application of it to the numerous problems dealt with, that justify the conclusion that he has produced one of the most thoughtful, comprehensive, and original contributions to the study of heredity which has yet appeared.

Until Darwin formulated the theory of natural selection, biology, with the exception of its physiological branch, consisted of purely descriptive knowledge, notwithstanding the promulgation of the Lamarckian and other hypotheses. Darwin achieved for biology what Newton achieved for physics and astronomy, and gave it the rank of an interpretative science. In the earlier descriptive stage of any branch of knowledge facts are classified according to their resemblances and co-existences. In the final scientific stage facts are arranged in sequences, and the relation of cause and effect is traced. Hypotheses are formulated which, if false, are disproved, if true, are established as theories, by making a deductive inference of consequences followed by a test appeal to reality, that is, to all relevant facts, in order to see whether such consequences actually occur. This method, familiarly exemplified by the establishment of the law of gravitation, and accepted as a matter of course in most interpretative branches of science, is not only the one method by which an hypothesis can be tested, but also brings within its range ever-increasing multitudes of facts which would not otherwise have been thought of. It also links the hypothesis with other established laws, and tends to render the science of which it forms a part a coherent whole There is still, however, a remarkable difference, in spite of the work of Darwin, between the methods of many biologists and that common to students in other branches of knowledge, who are trained in the rigid application of the only method by which interpretative science of permanent value has ever been created. These have common criteria for evidence and proof, accept no hypotheses which cannot be treated deductively, reject none that survive such a test, and value all in proportion as they have been proved, and extended in scope, by this means. Many biological writings, on the other hand, betray a great departure from the strait way of scientific method. This is owing, probably, to a training too exclusively devoted to descriptive work, to a collection of resemblances and coexistences. Extraordinary differences of opinion are rife among biologists as to the nature of evidence and proof, and innumerable debates result which seldom or never end in agreement. With the exception of the theory of natural selection hardly one biological hypothesis has been tested deductively. Not even natural selection commands universal assent. There are but few, indeed, who explicitly reject it, but some, while confessing it with their lips, are fain to discredit it as an outworn superstition. These sharp and sectarian differences between biologists are especially marked on the subject of heredity. The very procedure by which natural laws are established—the procedure laid down by logicians and actually followed by all great scientific discoverers who have achieved permanent results—is often stigmatized as "deductive," or "logical," or "dialectic," or "essay writing," or by some other epithet equally inept. It seems, therefore, that there must be something wrong in the method of study which results in such a medley of doctrine and such a war of hostile sects.

A careful perusal of the work before us, in which an attempt is made, not merely to formulate hypotheses, but to establish laws, will show that the author's conclusions are as noteworthy as the scientific strictness of his method. He has, we think, made a luminous synthesis of the known facts of heredity, as well as many valuable criticisms of existing opinions on the subject. He has, further, by taking a comprehensive view of all relevant facts with which he is acquainted and applying to them

[1] *The Laws of Heredity*. By G. Archdall Reid, M.B., F.R.S.E. London: Methuen and Co., 1910. (Med. 8vo., pp. 559. 21s.)

accepted methods of scientific inquiry, gone far towards converting heredity into an interpretative science of wide scope and utility.

The judgement that this book is one of the most important of all that have appeared concerning the matter of heredity, which, from Darwin's time onwards, has been largely the subject of untested hypotheses, will not be considered extravagant by those who, holding accepted views respecting scientific method, read the book carefully, note the area covered by it, the mass of material brought into evidence, and the closely-connected and strictly-tested chain of reasoning by which the argument is supported. Though the book is much wider in scope than any previous essays by the author it is notably coherent throughout. There are no isolated suppositions, and none that careful examination shows to be contradictory. The author seeks to secure each position by a thorough survey of all available evidence, and then to make it a stepping-stone to the next. The style is clear; but the reader should bear in mind that the very merit of clear and consecutive reasoning which marks this work is apt to obscure the range of its contents. Any one familiar with the literature of the subject will, of course, meet with many problems which are well known to him; but he will also perceive many new ones, and will recognize that, in the case of all, the method of treatment is in many respects original. The reader should not fail to bear in mind that in each instance the writer is offering, not one of the mere guesses which are somewhat common in biological literature, but such proof as cannot rightly be rejected except by demonstration of mistaken facts or faulty reasoning.

It is not possible, within such limits of space as could be reasonably allowed in this JOURNAL, to review adequately any of the highly-detailed chapters of this work. Though a large book it is much condensed; though easy to understand, it requires close attention on the part of the reader. We shall, therefore, give him but one or two examples of the author's method—chosen, not because they are specially characteristic or important, but because they admit of comparatively brief statement.

Biologists have found that embryos often present faint and fleeting likeness to lower types. The younger the embryo the lower the type it resembles and the dimmer the resemblance. It has, therefore, been surmised that the development of the individual is a recapitulation of the life-history of the race. But the facts, used in this way alone, leave the hypothesis as a mere guess, though a plausible one, which cannot be tested, and has been frequently controverted. Dr. Reid adopts the proper scientific procedure of founding his argument on familiar and indisputable facts, and testing it by reference to facts which are more disputable and less familiar. He notes that, in every species, offspring resemble their parents on the whole, but differ from them in details; and that this partial resemblance is reached through a recapitulation, with variations, of the parental development. Thus, the child of a man grows into another man through following closely, but not exactly, the developmental footsteps of the parent. Variations are progressive or retrogressive. The former, Dr. Reid contends, imply a complete recapitulation of the parental development (as regards the character under discussion) *plus* an addition; the latter imply an abbreviation of it. Both kinds not only occur in the adult at the end of development, but also are interpolated, throughout the course of it, in the embryo, the fetus, and the child. These propositions we are asked to accept as familiar and indisputable facts. Now if the child reaches maturity only by recapitulating (with additions and subtractions) the parental development, if every predecessor did the same, if every individual, while varying somewhat in every stage, used the development of his predecessor as a stepping stone to his own development, then the development of the last individual must necessarily be a recapitulation (more or less inaccurate) of the life-history of the race. That is, it must be a recapitulation (in the order of occurrence, but with additions and subtractions made in every generation) of the variations through the accumulation of which the character arose. Given the facts, this view follows of apparent necessity. The only doubt that may remain is whether, notwithstanding the apparent necessity of the conclusion, the reasoning has been correct. Recourse must therefore be had to a deductive inference of consequences. If it be true that development recapitulates life-history, and if variations constantly occur during the whole course of it, we should find its earlier stages—those that have been longest exposed to change—the most altered, the most unlike the life-history; and the later stages the least altered. This is exactly what is found. The offspring of a human being is clearly very like his immediate predecessors; but his embryo only faintly resembles its remote prototypes of the life-history. The hypothesis, therefore, is tested, and is, for the first time, claimed to be established as a law.

Again, in the slums of cities and other unfavourable conditions, parents tend to be unhealthy, and the offspring puny or diseased. What is the relation between these facts? Is it that the offspring are unhealthy because their parents are unhealthy, or because they themselves developed under unfavourable conditions? In other words, is their condition true "degeneracy," innate, and therefore capable of transmission and accentuation in future generations; or is it an acquirement, brought about by the environment? Between these two hypotheses a decision can be arrived at only after making a deductive inference of consequences, and then appealing to actual instances. The inference from the first hypothesis is that a race exposed to unfavorable conditions will, by the accumulation of injury, become increasingly degenerate until at last it becomes extinct. The inference from the second is that races exposed to unfavourable conditions will, by the weeding out of the unfit, become continuously more resistant until they are able to flourish where the ancestral types pined. The first hypothesis, it may be noted, is in opposition to the theory of natural selection, which supposes that races evolve only in the presence of unfavourable conditions, while the second accords with it. Ascertain now what has happened to the races of the world, human and brute, animal and plant. In no instance is any racial deterioration observable. Races which have been longest and most exposed to the life of villages, towns, and cities are most adapted to it; races that have been moderately exposed are less adapted; races that have suffered no such exposure quickly perish when exposed to such conditions of life. Negroes are especially resistant to malaria, Englishmen to tuberculosis, natives of India to dysentery; while the mortality of Polynesians, when they are exposed to imported diseases, is immense. Arabs are resistant to heat, Eskimos to cold, sewer rats to life in sewers, and mosses to lack of sunshine, etc. The first hypothesis, therefore, is negatived and shown to be incompatible with the fact that life persists on earth. The second is sustained by a mass of illustration, detail, and proof too great for quotation here, and shown to be a far-reaching law, already generally accepted by all biologists who have given much attention to the subject, but not before, so far as we are aware, so well thought out.

A few words are necessary concerning Dr. Reid's exposition of the nature of "acquirements" and its bearing on the still vexed question of transmission of "acquirements." Weismann's contention, now almost universally accepted by biologists, that acquirements are not transmitted, would seem to be the only sure and important advance in the study of heredity since Darwin's time. But as the bald statement is frequently made that only "innate" characters are inherited, and a sharp distinction as to origin is apparently assumed between "innate" and "acquired" qualities, we find a vast amount of confused opinion prevailing on this matter and a strong tendency on the part of many biologists to ignore the immense value of acquirements, especially in the highest animals, as greatly important adaptations. Dr. Reid demonstrates more fully, we think, than any previous writer, that the power of making acquirements under the stimulus of use is a signal result of evolution, and is just as innate and truly germinal in origin as the innate power of growing under the stimulus of nutrition alone. He insists that all characters which the individual can possibly develop are implicit in the germ-plasm, but that none can be developed without some stimulus—a proposition which few biologists would specifically deny, though it would appear to be ignored by some. Characters requiring the stimulus of use for their development are not directly transmissible, but when they are developed it is by virtue of a capacity inherent in the germ-plasm.

Therefore all characters are ultimately germinal and innate. These considerations make it clear that the usual and inaccurate way of stating the doctrine of the non-transmissibility of acquired characters has tended to divert attention from the real significance of responses to use and injury, and from the evolution which has enabled the individual to develop the power of making such responses. The belief that acquirements are not "inherited" has caused many students of heredity to think of acquirements as unimportant, and virtually to make the assumption that all seemingly important characters are inherited. On the other hand, a large number of medical men, owing to their observations of numerous characters which develop almost identically alike in parent and child under similar stimuli of use in both, are led to conclude that all such characters are the result of the germinal transmission to the child of characters plainly acquired by the parents during their lifetime; or, in other words, to believe in the *transmutation* of a character, developed under the stimulus of use, into one which has developed under that of nutrition alone.

That this question is of commanding importance, especially in relation to the human species, and very notably in the matter of education, is evidenced by the emphasis given to the subject in the writings, not only of some biologists, but also of many others who make forecasts of a science of "eugenics." It is a remarkable fact that two prominent and mutually opposed schools of contemporary biologists—namely, the biometricians and the Mendelian mutationists—are both, apparently, inclined to regard all really important mental characters in adult human beings as exclusively germinal in origin, and proceed to draw wide inferences on the ground of this assumption, whereas the germinal inheritance is potential only.

This reflection induces us to call special attention to those parts of Dr. Reid's book which deal with the evolution and heredity of mental qualities, and also to his criticisms of the doctrines and methods of the two biological schools above mentioned. On these points, important though they are, space prevents us from dwelling. We can but state our opinion that the author has shown that the claims many Mendelians and Mutationists would appear to make to have revolutionized the science of heredity cannot be substantiated, that their methods are lacking in scientific precision, and that they have sought to give to the facts a width of application which does not belong to them. He has, we think, corroborated, with a mass of detail drawn from extensive fields of observation, the essential theory that the evolution of species is due to the action of Natural Selection on small or fluctuating variations, not to the sudden occurrence of so-called "mutations"; and that the central Mendelian doctrine of "unit segregation" is not a "discovery," as it is frequently termed, but a hypothesis as yet untested.

The appendix contributed to this book by Professor H. H. Turner is of considerable interest and illustrative value. It exemplifies in a striking manner his initial statements that there is a closer resemblance between biological and geometrical reasoning than might at first sight be supposed, and that Dr. Reid has shown that we may build upon certain biological truths in a manner not very different from that in which geometers build upon their fundamental axioms. We feel sure that this book will be recognized as of great importance both by those who are prepared to agree with its conclusions and those who are inclined to oppose them. Nor can it fail, in view of the extensive consideration given by the author to the subject of disease and to social matters generally, to be of peculiar interest both to medical men and to all serious students of human affairs.

THE OPTIC NERVE AND THE NASAL SINUSES.

The association of visual disturbances and blindness with suppurating air sinuses is well recognized, and it is also recognized that the phenomena are more commonly unilateral than bilateral, but the relationship of the walls of the optic foramina to the ethmoidal and sphenoidal air sinuses is less well known. This defect of knowledge has been largely remedied by Professor Onodi's elaborate investigations into the relations and variations of the various air sinuses which communicate with the nasa fossae, and Dr. Lückhoff's excellent translation of Professor Onodi's monograph on *The Optic Nerve and the Acccssory Sinuses of the Nose*[2] places a summary of the most important facts at the disposal of all English-reading people. The German edition of the book was published in 1906; therefore the main points of its contents are already familiar to many, but the English edition contains the results of the author's work since that time, and almost double the number of illustrations in the German edition; it is, therefore, more complete and instructive than the original volume. Professor Onodi shows, by means of numerous illustrations, how variable the development of ethmoidal and sphenoidal sinuses is, both individually and relatively, and how closely the walls of the optic canals are associated sometimes with the sphenoidal and sometimes with the posterior ethmoidal cells. It appears that the most posterior ethmoidal cell may form the inner wall of the optic canal on the same or on both sides, and one sphenoidal sinus may lie in close relation with the opposite optic canal, with both optic canals, and with the optic sulcus. In some cases the optic canal runs within a sphenoidal or ethmoidal sinus, and the optic nerve of one or both sides may be separated from the mucoperiosteum of a sinus by a lamina of bone of varying thickness and the brain membranes, or by the brain membranes alone. In view of this close relationship between the optic canals and the accessory air sinuses it is not surprising that inflammatory conditions should pass by direct extension from the walls of the latter to the contents of the former; indeed it may seem rather a matter for surprise that the optic nerves are not more commonly implicated by inflammatory conditions of the air sinuses, when it is remembered that to the close topographical relationship is added an intimate association between the venous channels of the air sinuses and those of the orbit and optic nerve. The seriousness of the circumstances will be readily grasped by any one who consults Professor Onodi's figures and text, and his warning regarding the care which must be observed, during operations on the posterior ethmoidal cells and sphenoidal sinuses, if injury to the contents of the optic canals is to be avoided, will not seem superfluous. The book is valuable both to the specialist and the general practitioner. It will aid the former in his particular line of work, and it will suggest to the latter the necessity of keeping a careful outlook upon patients suffering from suppurative affections of the nasal air sinuses.

HANDBOOKS OF PRACTICAL PHYSIOLOGY.

Drs. Alcock and Ellison have written a book on *Experimental Physiology*,[3] to which Professor Starling, who has been through all the exercises with the authors, contributes a preface. The book is evidence of the attempt which is being made to adjust the teaching of preliminary and intermediate sciences directly to the future requirements of the student of medicine. This adjustment aims at so teaching the principles of physics, chemistry, and biology that the students' attention shall be directed to those parts of these sciences which afterwards bear on physiology, pharmacology, parasitology, and bacteriology, stress being laid in teaching on those parts of the vast science of modern physiology which bear on pathology and the methods of clinical medicine. The new syllabuses of the University of London will, it is confidently hoped, work great things in this direction, and if the schoolmasters will only do their work and put all the London students of medicine through the matriculation or one of the several equivalents of that examination now allowed there will be little to complain of in the course offered for the London University degree. The great obstruction to a proper course in physiology has been, and still is, the legal restrictions which prevent the student from learning on the lower animals the routine of the administration of anaesthetics or the technique of the simple operative procedures necessary for the investi-

[2] *The Optic Nerve and the Accessory Sinuses of the Nose.* By A. Onodi. Translated by I. Lückhoff. London: Baillière, Tindall, and Cox. 1910. (Cr 4to, pp. 101, plates 50. 10s. 6d.)

[3] *A Textbook of Experimental Physiology.* By N. H. Alcock, M.D., D.Sc., and F. O'B. Ellison, M.D. London: J. and A. Churchill. 1909. (Roy. 8vo, pp. 151; 36 figures. 5s.)

gations of the functions of the healthy body. The British student hitherto has been compelled to gain his first experience in giving anaesthetics and in operation on man himself. A greater absurdity than this restriction it is difficult to imagine. In the United States the medical students carry out a proper course of investigations of blood pressure, respiration, etc, on fully anaesthetized animals, and this course forms one of the most fundamentally important in their whole curriculum. It gives them practice and nerve in the administration of anaesthetics, and in operating on the living tissues—so different to the dead body—controlling haemorrhage, etc., besides focussing their attention on the greater problems of the circulation and respiration, the movements of the alimentary canal and bladder, the secretion of urine, etc. It was undoubtedly the legal restrictions which drove the first framers of courses of experimental physiology into the comparatively sterile lines of frog's muscle-nerve drum work. The present endeavour, as set forth in this excellent book of Drs. Alcock and Ellison, is to restrict the frog-muscle work to two or three chapters, and focus the attention on demonstrations on anaesthetized animals by the lecturer or experiments carried out on the carcass of decapitated mammal by the student. As Professor Sherrington has shown, the cat can be anaesthetized and its head removed by a bloodless operation performed by a licensed teacher, and then the carcass can be kept going by artificial respiration, so that the student can himself study the blood pressure, inhibition and acceleration of the heart, oncometry of the kidney, movements of the bladder and bowels, and reflex actions of the spinal cord. In addition to this, the present endeavour of the physiologist is to introduce, as far as possible, experiments on man, such as the study of blood pressure and effect of posture on the blood pressure, effect of breathing carbonic acid in excess or deficient oxygen, influence of exercise on pulse and breathing, etc. The authors have introduced several good exercises of this kind, and altogether have put together an excellent course, and by no means overweighted or beyond the student's power.

Professor JOHN MALCOLM, of the University of Otago, has added another to the already numerous textbooks of *Practical Physiology*.[4] The book has been written specially for students attending his own class, and the subject is treated in the order of the systematic lectures to enable students to study the theoretical and practical sides together, a plan which is undoubtedly the best but troublesome to carry out. The exercises are well chosen, and the directions are set forth in a very clear manner, with heavy type to catch the eye at the head of each exercise. Useful appendices are given in which lists of the apparatus and preparations required for the lessons are set out, and practical directions are given for reading burettes, using pipettes, filtering, etc.

NOTES ON BOOKS.

DR. J. A. RIVIÈRE, editor of the *Annales de physicothérapie*, has published a volume[5] of clinical sketches of physical therapeutics, the merits of which are endorsed by Professor Lancereaux, who contributes a short preface. Dr. Rivière's views on therapeutics are summarized thus: He says (p. 9) "calomel, castor oil, water and heat suffice to cut short acute diseases. On the other hand, chronic diseases which indicate serious functional and organic changes require, in addition to the incontestably useful chemical and hygienic agents, the use of the great physical modificators of which the organism is after all but a result," and he refers to a paper published in this JOURNAL (October 12th, 1901) in which he developed these opinions. The "modificators" to which he alludes are electricity, especially in the form of high frequency currents; heat, light, including the x rays and radium; water; movements including massage, passive exercises, the use of Zander apparatus and systematic gymnastic exercises; "atmaitry" (open windows), alteration of atmospheric pressure, respiratory gymnastics, and the like. The book is divided into chapters describing the methods employed and summarizing the results claimed for them. Typhoid fever, appendicitis, malignant jaundice and yellow fever, with three-fourths of the diseases of infants may, he thinks, be cured by calomel, castor oil, water and heat, and malignant tumours and tuberculosis by high frequency currents. He is interested in premature burials, has views on the cancer microbe, and is the founder and president of an international society for the suppression of war. The book is illustrated by a number of figures and photographs showing the apparatus employed. There can be no doubt of the value of many of the means which are described, but Dr. Rivière appears to exaggerate their power, especially in graver maladies.

[4] *Notes on Practical Physiology*. By John Malcolm, M.D. Dunedin N.Z.: Fergusson and Mitchell. 1909. (Post 8vo, pp. 188; figs. 17. 7s. 6d.)

[5] *Esquisses cliniques de physicothérapie*. Par le Docteur J. A. Rivière. Paris: Bouchy and Co. 1910. (Med. 8vo, pp. 400. Grav. 64. Fr. 7.50.)

THE ANNUAL MEETING.

GOLFING ARRANGEMENTS.

The Ulster Cup.

IT will be remembered that a cup was presented by the Ulster Branch last year, and is to be played for annually on the following conditions, as laid down by the Ulster Branch: "Bogey play under handicap, not exceeding 18; cup to become the property of the member of the Association winning it twice in succession, or three times in all; one round of 18 holes to be played on one day at the Annual Meeting, with no previous play." At Newcastle last year about eighty competitors played, and the cup was won by Dr. Shekleton, Holywood, co. Down. The cup is a copy of the famous "Ardagh" Cup, which is in the National Museum in Dublin, and whose history is known from the eleventh century.

Owing to the conditions of play, the golf subcommittee are this year compelled to insist that the numbers competing shall be limited to 200, and that all entries must be received by July 8th, in order that they may make arrangements to reduce the numbers to 200 if necessary.

All members who wish to enter for this prize are requested to send their names to Dr. F. J. Smith, 138, Harley Street, W., as soon as possible, and *in any case before July 8th, after which no entry can be received.*

The competition will take place on Friday, July 29th, on the excellent course of the Burhill Golf Club, which has most generously been placed at the disposal of the Association for this purpose by the directors. The club is near Walton-on-Thames station—easily reached from Waterloo.

Annual Match.

The usual annual match will take place on Wednesday afternoon, July 27th. It will be between the Metropolitan Counties Branch and the visitors, and it is hoped that at least twenty a side will take part. It will be played, by the kindness of the committee, on the well-known Northwood Links. All members who wish to play are asked to send their names at once to Mr. Percy Furnivall, 28, Weymouth Street, Portland Place, W., in order that the best selection available may be made. It is particularly requested that names should be sent in as early as possible, and each should be accompanied by the player's club and lowest handicap.

Honorary Membership of Clubs.

Golfing members generally will be pleased to hear that a number of the best clubs in the neighbourhood of London have, with extreme generosity, placed at the disposal of the Association a considerable number of honorary memberships for the days of the meeting. This will give visiting members a unique opportunity to play upon these courses. Up to the present the following clubs have invited members to use their links: Acton, Ashford Manor, Burnham Beeches, Bushey Hall, Burhill, Edgware, Eltham Warren, Fulwell, Hanger Hill, Home Park, Mid-Surrey, Neasden, Princes', Richmond, Romford, Sandy Lodge, Sunningdale, Totteridge, Tooting Bec, Walton Heath, Wembley, West Middlesex, Royal Wimbledon, and Worplesdon.

Arrangements will be made by which members wishing to play a round may leave their names and handicaps at the Reception Rooms not later than the day before, in order that matches may be arranged.

PROPOSED BLACK-AND-WHITE EXHIBITION.

An effort is being made to get together for the Annual Meeting of the Association, and in connexion with the Museum Committee, a collection of prints and black-and-white drawings having reference to the medical profession

and medical men. Many such pictures have appeared in *Punch* and other illustrated papers, and no doubt there are many old prints in existence which would interest and amuse. Dr. Rice-Oxley, 5, Kensington Square, W., who has undertaken the work of arranging the collection, will be most grateful for the loan of drawings, prints, or cartoons, or for any suggestions towards the carrying out of the idea. Every possible care will be taken of loans. Any good original paintings respecting medical men or matters would be acceptable. As the time is somewhat short, Dr. Rice-Oxley will be glad of immediate response to this appeal.

King's College Hospital.

The members of the medical staff of King's College Hospital are making arrangements whereby members attending the Annual Meeting may have an opportunity of inspecting the new hospital buildings situated at Denmark Hill. In order to facilitate these arrangements we have been requested to ask those who desire to avail themselves of the hospitality of the medical staff to intimate the fact to the Honorary Secretary of the Medical Museum Committee (Mr. H. W. Armit, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.)

BRITISH MEDICAL BENEVOLENT FUND.

At the May meeting of the Committee fourteen cases were considered, and grants amounting to £131 made to twelve of the applicants. Appended is an abstract of the cases relieved:

1. M.R.C.S., aged 71. Quite incapacitated by senile gangrene, and dependent on children who can ill afford to help. Voted £10.
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11. Daughter, aged 67, of late M.D.London. Maintained herself as a governess for more than 40 years, but is now quite incapable of work. Relieved twice, £24. Voted £12.
12. Widow, aged 70, of M.D.Edin. Dependent on a small weekly allowance given locally and earns a few shillings occasionally by knitting. Children unable to help. Relieved six times, £69. Voted £12.

Contributions may be sent to the Hon. Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

MOTOR CARS FOR MEDICAL MEN.

Handy Landaulette Wanted.

Member B.M.A.—Few if any four-cylinder cars are built with the wide lock which enables a taxicab to turn in so small a space; taxicabs have mostly two-cylinder engines. If our correspondent will state the horse-power he contemplates we can give the prices (approximately) of some reliable makes. It is well worth while when buying a car to join the Automobile Co-operative Association, 1, Albemarle Street, W., as almost any make of car can be bought through it more advantageously than from makers direct. A body on taxicab lines but much better finished can be got for about £110. A four-cylinder chassis will cost from £150 upwards, according to make and horse-power.

INDIA IN 1908.

(Continued from page 1301.)

The Gaols.

Sickness and scarcity led to an increase of crime and sapped the strength of the people. Accordingly the gaols were overcrowded and the health of the prisoners admitted into them bad. The prison population was 115,403, an increase of 7,728 on 1907. There was some increase in sickness-rates and the death-rate was 24.17, or 6.45 in advance of that of the preceding year. There was an increased mortality in every province except Bombay and the North-West Frontier, and the provinces of Bengal, Madras, and the United Provinces showed the largest increase. The mortality of district gaols receiving prisoners in the first instance was higher than of the central gaols, but in these prisoners of longer confinement die in greater numbers than in the earlier years of their incarceration. There was, as might be expected, an increase in the sickness and mortality attributed to malarial fevers, but the rates fell far short of those which obtained during the year among the outside population, particularly in the Punjab and United Provinces. There had been a decline in recent years which the Sanitary Commissioner considers real and not due to any material extent to changes in nomenclature and more careful diagnosis, though these have probably been operative. The report gives evidence of the value of anti-mosquito measures and the prophylactic use of quinine in reducing the prevalence and mortality of malarious fever, especially the latter. The experience of the Punjab gaols under the careful supervision of Lieutenant-Colonel Braide is particularly demonstrative, showing a reduction in fever prevalence in gaols in the face of an enormous increase outside. There was a rise in the admission-rates of both dysentery and diarrhoea. Deaths from dysentery were, contrary to the experience of 1907, more numerous than from tubercle of the lungs, which also underwent a considerable rise, the rates being 4.67 and 3.76, against 2.57 and 2.74 in the preceding year. There was also a rise in the death-rate from pneumonia, cholera, and small-pox and a slight rise in enteric fever. There were 10 cases of plague, 5 fatal, against 50 and 30 in 1907. There were 17 cases of beri-beri with 10 deaths; 10 cases of epidemic dropsy with 1 death; 24 cases of cerebro-spinal fever with 18 deaths; 3 cases of relapsing fever, no death; 1 case of kala-azar, fatal; and no case of Mediterranean fever nor of rabies. The details of provinces indicate a serious amount of overcrowding which demands urgent attention. Preparing pice packets of quinine has been introduced as an industry into the Alipore gaol.

European Troops.

The strength of the European army in India was 68,933. Of this number, a daily average of 10,923 occupied hill stations and 3,821 hill convalescent dépôts and sanatoriums; 1,603 were marching, 1,100 stationed at Aden and 367 at Deolali awaiting passage to England, 314 with the Mohmand Field Force, and 97 with the Bazar Valley Field Force. These expeditions took place in February, March, April, and May. The admission and death rates underwent increase, the latter from 8.18 to 9.78. Cholera was the chief cause of higher mortality. The invaliding rate was much lower on account of the healthiness of 1907 and the retention of suitable cases in hill stations. The northern army was more unhealthy than the southern, especially at stations within the area of malarious excess. Influenza was less prevalent. Cholera gave rise to 93 cases and 76 deaths. Of these, 50 cases and 41 deaths occurred in the Mohmand Field Force. The Royal Munster Fusiliers had 43 cases and 36 deaths—an explosion attributed to impure water. There were 53 cases of small-pox, with 2 deaths, against 30 and 1 in 1907. Malarial fever caused an admission-rate of 244, against 154 in the previous year. There has been a gradual abatement of malarious suffering during the last three decades, the admission-rates being 485, 374, and 223. How far this reduction is real it is not easy to say. More careful diagnosis, treatment in barracks, after-treatment, the mosquito campaign, the prophylactic use of quinine, and the retention of soldiers in the hills until the fever season is past have contributed to the reduction. Preventive measures were in full play in 1908,

but the remarks of the Sanitary Commissioner indicate that improved methods are requisite. There were 5,096 admissions for "pyrexia of uncertain origin," a term which appears for the first time in the returns. There were 4 cases of kala-azar—one fatal, the diagnosis being confirmed by splenic and hepatic puncture. Only 3 cases of Mediterranean fever were returned. The admission and death rates for enteric fever were 14.5 and 2.76, against 13.1 and 2.77 in 1907. There is a long disquisition on fevers caused by "typhosus-like" organisms, on bacteriological diagnosis, bacillus carriers, modes of spread, and preventive measures, exhibiting a wide range of well-digested study. Only 2 cases of plague occurred. Fewer cases of phthisis were admitted or invalided. Pneumonia, which is now included among infective diseases, was somewhat more common and fatal, but other respiratory diseases were fewer. There was a rise in dysentery, but a considerable fall in hepatic abscess. The decline in prevalence of venereal diseases continues. There was increased sickness and mortality among officers, women, and children, the death-rates being 9.60, 13.53, and 50.18, against 7.71, 6.38, and 32.7 in 1907.

NATIVE TROOPS.

The strength of the native army was 126,975, of which 23,465 were located in hill stations, 8,640 marching, 1,041 in Aden and other stations outside of India, 762 in Colombo, 778 in Singapore, 2,314 in China, 333 with the Bazar Valley Field Force, and 1,183 with the Mohmand Field Force. The health of the army was not so good as in 1907, the sickness and invaliding rates were higher, and the death-rate 7.40, or, including absentees, 8.49. The northern army was more unhealthy than the southern, on account of malaria, which caused 39 per cent. of admissions. Pneumonia caused 29.7 of the deaths, cholera 12.3, malaria 7.8, enteric fever 7.8, and tubercle of the lungs 5.6. The troops stationed in China, Singapore, and Colombo were healthy. The Aden brigade had a death-rate of 6.24, and the troops in the Persian Gulf 37.50. The Bazar Valley Field Force had a mortality of 6.01, and the Mohmand of 35.44. The high rate of the latter was due to gunshot wounds (31) and cholera (5). Influenza was less prevalent and below the rate of the European army. There were 174 cases and 116 deaths from cholera, against 34 and 24 in 1907. There was a sharp outbreak at Abbotabad, and it was observed that 11 attendants on the sick in hospital were attacked—a somewhat unusual circumstance. From small-pox there were 103 admissions and 3 deaths, against 48 and 5. Since 1886 the prevalence and fatality of small-pox have been less in the native than the European army, owing, it is surmised, to more thorough vaccination and revaccination. There was an increase of malarious disease, which has been undergoing abatement of recent years; but these statistics are transitionary and uncertain. Preventive measures were actively resorted to, and, it is thought, with benefit. Nine cases were diagnosed as kala-azar, of which 4 were fatal. The diagnosis was confirmed by *post-mortem* spleno-hepatic puncture. From typhus fever only 4 admissions occurred, with 2 deaths. Cases of enteric fever were more numerous, but changes in nomenclature are probably responsible for the increase. From Malta fever there were 23 admissions. Plague caused 36 admissions and 14 deaths, against 85 and 56 in 1907. There was a decrease in scurvy; but tubercle of the lungs rose from 2·5 and 0·33 to 3·0 and 0·42. The rise was mainly due to an increase among Ghurkhas. There was also an increase in pneumonia. Dysentery was more prevalent, but not more fatal; and there was a rise in admissions from diarrhoea, as might be expected in a bad cholera year. The prevalence of venereal disease was about the same, and the decrease which has been taking place in recent years is not so marked as in European troops. The venereal admission-rates in the two armies were 15.2 and 69.6. There were only 13 admissions for beri-beri, without a death.

VACCINATION.

Notwithstanding the increased prevalence of small-pox there was a decrease in the number of vaccinations during the year ending March 31st, 1909, to which the statistics refer. The decrease was in primary vaccination, revaccinations being more numerous. The mean proportion of population successfully vaccinated was 35.93, against 36.07 in the preceding year. The prostration of the people by malarial fever and famine no doubt interfered with vaccine operations. There was a slight rise in the cost of each successful case. There is a striking difference in this respect in different provinces, between 8 annas 5 pies in Bombay and 2 annas 3 pies in Eastern Bengal and Assam. There has been no change in administrative or executive arrangements. The use of prepared lymph, mostly lanoline and glycerine, is on the increase, and a new dépôt for its manufacture has been opened at Belgaum in Bombay. Variolous inoculation is still practised in some parts of Burma.

MISCELLANEOUS.

Among topics discussed under the head of "General Remarks," the Mecca pilgrimage holds, as usual, a prominent place. Notwithstanding careful precautions, considerable mortality occurred among pilgrims travelling to and from the holy place. The most interesting incident recorded is the outbreak at Camaran towards the close of 1907 of cholera on a small scale among pilgrims conveyed from Bombay by two steamers. The cases appeared fifteen days and eleven days after the vessels had left Bombay. Dr. Delpino, the director of the quarantine station at Camaran, surmises that the disease was conveyed by "carriers" of latent germs, which for some reason acquired virulence at Camaran. This opens up a new and somewhat alarming view of the possibility of the conveyance of the infection of cholera over a long distance and a protracted interval. The disease prevailed severely in the Hejaz during four months, 21,000 deaths taking place among 140,000 pilgrims; but inquiries point to its having been imported from the north and not from India. Interesting summaries are given of the work done in the Central Research Institute, Kasauli; the Bombay Bacteriological Laboratory, the King's Institute of Preventive Medicine, Madras; the Pasteur Institute, Kasauli, and the Pasteur Institute of Southern India, Coonoor. Courses of instruction in sanitary engineering, vaccination, and bacteriology are given in the Madras and Bombay institutions. A great deal of original work was done during the year, both in the laboratories and by officers specially deputed, concerning malaria, enteric fever, plague, dysentery, lathyrism, gaol dietaries, and other subjects. Reference is made to the proceedings of the Imperial Malaria Conference, which assembled in Simla from October 12th to 18th, and the resolutions and recommendations formulated by the conference are given in detail. These contemplate continuous inquiry and action to the end of combating malaria by attacking the parasite in both mosquito and human hosts. This detail is peculiarly appropriate in a report dealing so largely with the ravages of malarious disease. Finally, a list is given of scientific publications issued under the authority of the Sanitary Commissioner with the Government of India.

EGYPT AND THE SUDAN IN 1909.

(*Continued from page 1302.*)

Cairo Drainage.

DURING the year progress has been made with the scheme approved in 1908 for the drainage of Cairo, and two important contracts have been given out, one to an English firm for the surface water drainage of Cairo, the sewerage of Zeitoun and suburbs, the construction of the main collector, and the construction of purification works at Khanka, fifteen miles north of Cairo; and the other to a French firm for the construction of the rising main from the main pumping station to the purification works. In the case of both these undertakings work has already begun. Various smaller contracts have been given to local firms, and one in particular, for the manufacture of the special bricks required by the scheme, will materially assist a local industry.

As many unfounded rumours have been in circulation regarding the effects upon the public health of the community of the execution of the drainage scheme, Sir Eldon Gorst states that it may be well to mention that no excavation will be undertaken within the city during the winter season, and, in any case, there will be no danger to health even when this work is in progress. The sewers will be laid near the surface, in order that the subsoil may not be disturbed to any great depth, and the trenches will not be of any great size, and will only

and medical men. Many such pictures have appeared in *Punch* and other illustrated papers, and no doubt there are many old prints in existence which would interest and amuse. Dr. Rice-Oxley, 5, Kensington Square, W., who has undertaken the work of arranging the collection, will be most grateful for the loan of drawings, prints, or cartoons, or for any suggestions towards the carrying out of the idea. Every possible care will be taken of loans. Any good original paintings respecting medical men or matters would be acceptable. As the time is somewhat short, Dr. Rice-Oxley will be glad of immediate response to this appeal.

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9. Daughter, aged 50, of late M.R.C.S., L.S.A. Suffers from chronic glaucoma and dependent on slight help from friends and occasional earnings as a nurse. Relieved twice, £15. Voted £10.
10. Daughter, aged 59, of late M.R.C.S., L.S.A. Earns about 5s. a week by needlework and receives the same amount from friends. Relieved three times, £42. Voted £12.
11. Daughter, aged 67, of late M.D.London. Maintained herself as a governess for more than 40 years, but is now quite incapable of work. Relieved twice, £24. Voted £12.
12. Widow, aged 70, of M.D.Edin. Dependent on a small weekly allowance given locally and earns a few shillings occasionally by knitting. Children unable to help. Relieved six times, £69. Voted £12.

Contributions may be sent to the Hon. Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

MOTOR CARS FOR MEDICAL MEN.

Handy Landaulette Wanted.

Member B.M.A.—Few if any four-cylinder cars are built with the wide lock which enables a taxicab to turn in so small a space; taxicabs have mostly two-cylinder engines. If our correspondent will state the horse-power he contemplates we can give the prices (approximately) of some reliable makes. It is well worth while when buying a car to join the Automobile Co-operative Association, 1, Albemarle Street, W., as almost any make of car can be bought through it more advantageously than from makers direct. A body on taxicab lines but much better finished can be got for about £110. A four-cylinder chassis will cost from £150 upwards, according to make and horse-power.

INDIA IN 1908.

(Continued from page 1361.)

The Gaols.

Sickness and scarcity led to an increase of crime and sapped the strength of the people. Accordingly the gaols were overcrowded and the health of the prisoners admitted into them bad. The prison population was 115,403, an increase of 7,728 on 1907. There was some increase in sickness-rates and the death-rate was 24.17, or 6.45 in advance of that of the preceding year. There was an increased mortality in every province except Bombay and the North-West Frontier, and the provinces of Bengal, Madras, and the United Provinces showed the largest increase. The mortality of district gaols receiving prisoners in the first instance was higher than of the central gaols, but in these prisoners of longer confinement die in greater numbers than in the earlier years of their incarceration. There was, as might be expected, an increase in the sickness and mortality attributed to malarial fevers, but the rates fell far short of those which obtained during the year among the outside population, particularly in the Punjab and United Provinces. There had been a decline in recent years which the Sanitary Commissioner considers real and not due to any material extent to changes in nomenclature and more careful diagnosis, though these have probably been operative. The report gives evidence of the value of anti-mosquito measures and the prophylactic use of quinine in reducing the prevalence and mortality of malarious fever, especially the latter. The experience of the Punjab gaols under the careful supervision of Lieutenant-Colonel Braide is particularly demonstrative, showing a reduction in fever prevalence in gaols in the face of an enormous increase outside. There was a rise in the admission-rates of both dysentery and diarrhoea. Deaths from dysentery were, contrary to the experience of 1907, more numerous than from tubercle of the lungs, which also underwent a considerable rise, the rates being 4.67 and 3.76, against 2.57 and 2.74 in the preceding year. There was also a rise in the death-rate from pneumonia, cholera, and small-pox and a slight rise in enteric fever. There were 10 cases of plague, 5 fatal, against 50 and 30 in 1907. There were 17 cases of beri-beri with 10 deaths; 10 cases of epidemic dropsy with 1 death; 24 cases of cerebro-spinal fever with 18 deaths; 3 cases of relapsing fever, no death; 1 case of kala-azar, fatal; and no case of Mediterranean fever nor of rabies. The details of provinces indicate a serious amount of overcrowding which demands urgent attention. Preparing pice packets of quinine has been introduced as an industry into the Alipore gaol.

European Troops.

The strength of the European army in India was 68,933. Of this number, a daily average of 10,923 occupied hill stations and 3,821 hill convalescent dépôts and sanatoriums; 1,603 were marching, 1,100 stationed at Aden and 367 at Deolali awaiting passage to England, 314 with the Mohmand Field Force, and 97 with the Bazar Valley Field Force. These expeditions took place in February, March, April, and May. The admission and death rates underwent increase, the latter from 8.18 to 9.78. Cholera was the chief cause of higher mortality. The invaliding rate was much lower on account of the healthiness of 1907 and the retention of suitable cases in hill stations. The northern army was more unhealthy than the southern, especially at stations within the area of malarious excess. Influenza was less prevalent. Cholera gave rise to 93 cases and 76 deaths. Of these, 50 cases and 41 deaths occurred in the Mohmand Field Force. The Royal Munster Fusiliers had 43 cases and 36 deaths—an explosion attributed to impure water. There were 53 cases of small-pox, with 2 deaths, against 30 and 1 in 1907. Malarial fever caused an admission-rate of 244, against 154 in the previous year. There has been a gradual abatement of malarious suffering during the last three decades, the admission-rates being 485, 374, and 223. How far this reduction is real it is not easy to say. More careful diagnosis, treatment in barracks, after-treatment, the mosquito campaign, the prophylactic use of quinine, and the retention of soldiers in the hills until the fever season is past have contributed to the reduction. Preventive measures were in full play in 1908,

but the remarks of the Sanitary Commissioner indicate that improved methods are requisite. There were 5,096 admissions for "pyrexia of uncertain origin," a term which appears for the first time in the returns. There were 4 cases of kala-azar—one fatal, the diagnosis being confirmed by splenic and hepatic puncture. Only 3 cases of Mediterranean fever were returned. The admission and death rates for enteric fever were 14.5 and 2.76, against 13.1 and 2.77 in 1907. There is a long disquisition on fevers caused by "typhosus-like" organisms, on bacteriological diagnosis, bacillus carriers, modes of spread, and preventive measures, exhibiting a wide range of well-digested study. Only 2 cases of plague occurred. Fewer cases of phthisis were admitted or invalided. Pneumonia, which is now included among infective diseases, was somewhat more common and fatal, but other respiratory diseases were fewer. There was a rise in dysentery, but a considerable fall in hepatic abscess. The decline in prevalence of venereal diseases continues. There was increased sickness and mortality among officers, women, and children, the death-rates being 9.60, 13.53, and 50.18, against 7.71, 6.38, and 32.7 in 1907.

NATIVE TROOPS.

The strength of the native army was 126,975, of which 23,465 were located in hill stations, 8,640 marching, 1,041 in Aden and other stations outside of India, 762 in Colombo, 778 in Singapore, 2,314 in China, 333 with the Bazar Valley Field Force, and 1,183 with the Mohmand Field Force. The health of the army was not so good as in 1907, the sickness and invaliding rates were higher, and the death-rate 7.40, or, including absentees, 8.49. The northern army was more unhealthy than the southern, on account of malaria, which caused 39 per cent. of admissions. Pneumonia caused 29.7 of the deaths, cholera 12.3, malaria 7.8, enteric fever 7.8, and tubercle of the lungs 5.6. The troops stationed in China, Singapore, and Colombo were healthy. The Aden brigade had a death-rate of 6.24, and the troops in the Persian Gulf 37.50. The Bazar Valley Field Force had a mortality of 6.01, and the Mohmand of 35.44. The high rate of the latter was due to gunshot wounds (31) and cholera (5). Influenza was less prevalent and below the rate of the European army. There were 174 cases and 116 deaths from cholera, against 34 and 24 in 1907. There was a sharp outbreak at Abbotabad, and it was observed that 11 attendants on the sick in hospital were attacked—a somewhat unusual circumstance. From small-pox there were 103 admissions and 3 deaths, against 48 and 5. Since 1886 the prevalence and fatality of small-pox have been less in the native than the European army, owing, it is surmised, to more thorough vaccination and revaccination. There was an increase of malarious disease, which has been undergoing abatement of recent years; but these statistics are transitionary and uncertain. Preventive measures were actively resorted to, and, it is thought, with benefit. Nine cases were diagnosed as kala-azar, of which 4 were fatal. The diagnosis was confirmed by *post-mortem* spleno-hepatic puncture. From typhus fever only 4 admissions occurred, with 2 deaths. Cases of enteric fever were more numerous, but changes in nomenclature are probably responsible for the increase. From Malta fever there were 23 admissions. Plague caused 36 admissions and 14 deaths, against 85 and 56 in 1907. There was a decrease in scurvy; but tubercle of the lungs rose from 2·5 and 0·33 to 3·0 and 0·42. The rise was mainly due to an increase among Ghurkhas. There was also an increase in pneumonia. Dysentery was more prevalent, but not more fatal; and there was a rise in admissions from diarrhoea, as might be expected in a bad cholera year. The prevalence of venereal disease was about the same, and the decrease which has been taking place in recent years is not so marked as in European troops. The venereal admission-rates in the two armies were 15.2 and 69.6. There were only 13 admissions for beri-beri, without a death.

VACCINATION.

Notwithstanding the increased prevalence of small-pox there was a decrease in the number of vaccinations during the year ending March 31st, 1909, to which the statistics refer. The decrease was in primary vaccination, revaccinations being more numerous. The mean proportion of population successfully vaccinated was 35.93, against 36.07 in the preceding year. The prostration of the people by malarial fever and famine no doubt interfered with vaccine operations. There was a slight rise in the cost of each successful case. There is a striking difference in this respect in different provinces, between 8 annas 5 pies in Bombay and 2 annas 3 pies in Eastern Bengal and Assam. There has been no change in administrative or executive arrangements. The use of prepared lymph, mostly lanoline and glycerine, is on the increase, and a new dépôt for its manufacture has been opened at Belgaum in Bombay. Variolous inoculation is still practised in some parts of Burma.

MISCELLANEOUS.

Among topics discussed under the head of "General Remarks," the Mecca pilgrimage holds, as usual, a prominent place. Notwithstanding careful precautions, considerable mortality occurred among pilgrims travelling to and from the holy place. The most interesting incident recorded is the outbreak at Camaran towards the close of 1907 of cholera on a small scale among pilgrims conveyed from Bombay by two steamers. The cases appeared fifteen days and eleven days after the vessels had left Bombay. Dr. Delpino, the director of the quarantine station at Camaran, surmises that the disease was conveyed by "carriers" of latent germs, which for some reason acquired virulence at Camaran. This opens up a new and somewhat alarming view of the possibility of the conveyance of the infection of cholera over a long distance and a protracted interval. The disease prevailed severely in the Hejaz during four months, 21,000 deaths taking place among 140,000 pilgrims; but inquiries point to its having been imported from the north and not from India. Interesting summaries are given of the work done in the Central Research Institute, Kasauli; the Bombay Bacteriological Laboratory, the King's Institute of Preventive Medicine, Madras; the Pasteur Institute, Kasauli, and the Pasteur Institute of Southern India, Coonoor. Courses of instruction in sanitary engineering, vaccination, and bacteriology are given in the Madras and Bombay institutions. A great deal of original work was done during the year, both in the laboratories and by officers specially deputed, concerning malaria, enteric fever, plague, dysentery, lathyrism, gaol dietaries, and other subjects. Reference is made to the proceedings of the Imperial Malaria Conference, which assembled in Simla from October 12th to 18th, and the resolutions and recommendations formulated by the conference are given in detail. These contemplate continuous inquiry and action to the end of combating malaria by attacking the parasite in both mosquito and human hosts. This detail is peculiarly appropriate in a report dealing so largely with the ravages of malarious disease. Finally, a list is given of scientific publications issued under the authority of the Sanitary Commissioner with the Government of India.

EGYPT AND THE SUDAN IN 1909.

(*Continued from page 1302.*)

Cairo Drainage.

DURING the year progress has been made with the scheme approved in 1908 for the drainage of Cairo, and two important contracts have been given out, one to an English firm for the surface water drainage of Cairo, the sewerage of Zeitoun and suburbs, the construction of the main collector, and the construction of purification works at Khanka, fifteen miles north of Cairo; and the other to a French firm for the construction of the rising main from the main pumping station to the purification works. In the case of both these undertakings work has already begun. Various smaller contracts have been given to local firms, and one in particular, for the manufacture of the special bricks required by the scheme, will materially assist a local industry.

As many unfounded rumours have been in circulation regarding the effects upon the public health of the community of the execution of the drainage scheme, Sir Eldon Gorst states that it may be well to mention that no excavation will be undertaken within the city during the winter season, and, in any case, there will be no danger to health even when this work is in progress. The sewers will be laid near the surface, in order that the subsoil may not be disturbed to any great depth, and the trenches will not be of any great size, and will only

remain open for a few hours; all earth will be disinfected directly it is brought to the surface, the pipes will be immediately laid, and the trench refilled. There is, therefore, not the slightest ground for anxiety as to the health of the city being prejudicially affected during the carrying out of the scheme, which, when completed, will fulfil all the modern sanitary requirements, and will enable Cairo to rank with the healthiest cities of the world. It is hoped that before the commencement of the winter season of 1910–11 the surface-water system for dealing with the rainfall in Cairo will be practically finished, and that there will be no further flooding of the streets during wet weather.

Mosquitos and Malaria.

The antimosquito movement in Cairo was first started in 1902, the measures adopted consisting in oiling cesspools, wiring ventilators, putting fish into ornamental waters, and removing stagnant water. These measures have met with a certain amount of success, though not sufficient to permit the disuse of mosquito curtains; in fact, so long as excavations and low-lying spots exist which contain infiltration water during high Nile, mosquitos will continue to breed in Cairo. No doubt the steps now taken are efficacious within certain limited areas, but a much more effective cure will be the completion of the drainage scheme. In Port Said the antimosquito campaign has been carried on in more favourable circumstances, and has, owing to the compact area of the town and the absence of infiltration, resulted in a distinct improvement in the conditions of life. There has been some misunderstanding as to the object of the measures taken in these two towns, and it appears to have been supposed that they were intended to combat malaria. This is an error. The *Anopheles* mosquito, the species which carry malaria, breed in fresh and slightly saline water, and is but rarely found in Cairo and Port Said. In Suez and Ismailia true malaria exists, and the measures taken in these towns to stamp out the *Anopheles* mosquito have, as is well known, produced great improvement in the public health.

School of Medicine.

During the year 16 students obtained their diplomas; in October 50 new students joined. There are at present 206 students in the School of Medicine and one in the School of Pharmacy. Four medical students were sent to England for a post-graduate course of study, with a view to joining the teaching staff on their return.

Child Labour in Factories.

An important order has been issued in connexion with the employment of child labour in cotton-ginning factories. The chief provisions of the measure are as follows:

1. No child under 9 years of age may be employed in a cotton-ginning factory.

2. The employment of children between 9 and 13 years of age is subject to the conditions that the child (*a*) holds a certificate of age and physical fitness for work, and (*b*) must not work for more than eight hours a day; night work and certain other particularly dangerous forms of employment are altogether prohibited.

3. All persons engaged in recruiting or supervising child labour must be licensed.

4. Government inspectors have the right to enter factories in order to supervise the proper working of the regulations and to report any infringement of the law.

5. A first offence may be punished by a fine up to £E1, and the second by imprisonment not exceeding a week.

6. The Ministry of the Interior has power to extend the regulations to other industries should such a course appear necessary.

SUDAN.

Public Health

Three new hospitals at Khartoum, Atbara, and Port Sudan were all opened during the year. The buildings are satisfactory, but various accessory constructions are still required in the two former.

The Sudan Medical Department has been placed under the direction of Colonel Mathias, principal medical officer of the Egyptian army. Dr. Christopherson has been appointed director of the Khartoum and Omdurman civil hospital.

The number of out-patients treated increases steadily, and about 140,000 were treated in 1909, as compared with 121,000 in the preceding year. The number of in-patients remains at about 7,000.

Forty-one thousand vaccinations were performed during 1909, as against 19,000 in 1908. There was little small-pox in the country, nor has there been any serious epidemic of infectious disease during the past year.

A report on the subject of sleeping sickness has been furnished by Captain Anderson, who has been conducting investigations on the boundary of Bahr-el-Ghazal and the Lado Enclave, and valuable suggestions are made regarding measures of precaution against the introduction of the disease into the Soudan from that quarter.

An inquiry has also been instituted into the causes of the obscure and fatal disease, kala-azar, which has in recent years appeared in the Kassala province and on the Blue Nile.

Science.

Dr. Balfour, the Director of the Wellcome Research Laboratories, reports that, despite the great increase in the amount of routine work—especially in the bacteriological section—good progress has been made in the domain of research. The past year has been one of great activity, the busiest, and, in some respects, the most useful, that the laboratories have experienced.

The Seligmann Anthropological Mission left Khartoum at the end of last year, and will begin work among the Nubas of Kordovan.

In spite of the financial stringency which prevailed at the time the Budget for 1910 was framed, it has been possible to meet Dr. Balfour's demand for an increase of staff.

THE SOUTH AFRICAN MEDICAL CONGRESS.

THE next South African Medical Congress is to be held at Capetown in the autumn of this year. The exact date is not yet settled, but it will be within a few days of the opening of the Union Parliament, which is to take place about the middle of October. There have been eleven previous congresses. The arrangements made are closely akin to those of the British Medical Association at its annual scientific meetings, but all registered medical practitioners in South Africa are eligible for membership on payment of a subscription of one guinea. The President this year is Mr. C. F. K. Murray, M.D., R.U.I., F.R.C.S.I., Consulting Medical Officer to Somerset Hospital, Capetown, President of the Cape Colony Medical Council, and formerly Chairman of the Cape of Good Hope Leprosy Commission of 1895. The Honorary General Secretary is Mr. H. A. Moffat, F.R.C.S.Eng., who is also Honorary Secretary of the Cape of Good Hope Western Branch of the British Medical Association, and Surgeon to the Somerset Hospital.

The Sections.

The Presidents of Sections and Honorary Secretaries respectively are:—Medicine: J. Bruce-Bays, M.D.Lond., of Grahamstown, and F. M. Morris, M.B., B.S.Lond., Capetown. Surgery: G. Ritchie Thomson, M.B., C.M.Edin., Johannesburg, and S. W. F. Richardson, M.B., B.Sc.Lond., F.R.C.S.Eng. Obstetrics and Gynaecology: A. H. Watkins, M.D.Edin., Kimberley; and A. Simpson Wells, M.B., Ch.B.Glasg., Capetown. Public Health: P. Murison, M.D.Edin., Durban; and J. A. Mitchell, M.B.Glasg., Capetown. Eye, Ear, Nose, and Throat: A. G. Brinton, F.R.C.S.Edin., Johannesburg; and D. J. Wood, M.B., C.M.Edin., Capetown. Pathology: W. Watkins-Pitchford, M.D.Lond., F.R.C.S.Eng., Pietermaritzburg; and G. W. Robertson, Capetown. Special Subjects: A. B. Ward, M.B.Camb., Bloemfontein; and W. Darley-Hartley, M.D.Durh., Capetown.

Programme of Discussions.

The subjects chosen for special discussion are:—Medicine: The modern treatment of tuberculosis. Surgery: The diagnosis and treatment of urinary calculus and its prevalence in South Africa. Obstetrics and Gynaecology: Diagnosis and treatment of fibroid disease of the uterus. Public Health: The aestival diarrhoeas of South Africa. Eye, Ear, Nose, and Throat: The diagnosis and treatment of headache due to disease or disorder of the eye, ear, nose, or throat. Pathology: The incidence and characteristics of cancer in South Africa. Special Subjects: Hospital administration and organization in South Africa.

Nova et Vetera.

SOME ROYAL DEATH-BEDS.

(Continued from p. 1304.)

James I.

OF the constitution and health of James I we have a very detailed account by one of his physicians, Sir Theodore Mayerne, dated December 1st, 1623, when the King was 57 years of age. As he died in March, 1625, this was less than eighteen months before the end of his life. It is summarized by Dr. Norman Moore in his *History of the Study of Medicine in the British Isles*,* and the Latin text is given in an appendix. It is a curious document showing a mixture of clinical sagacity with the fanciful pathology of the time. From it we learn that the "British Solomon," as he was called by his flatterers, or "the most learned fool in Europe," as he was described by his tutor George Buchanan, was easily affected by cold and damp, and that his lungs were often attacked by fluxion, though his chest was broad and well formed. He was extremely subject to catarrh and was always blowing his nose. The liver was liable to obstructions, and generated much bile. The King had the appetite which seems to be characteristic of royalty; as Mayerne expresses it, the stomach was always ready for the burden of a large quantity of food and readily got rid of anything hurtful either upwards or downwards, chiefly in the latter direction. Nevertheless, he suffered almost constantly from flatulence (*flatu importuno qui vel cruditatis vel fermentationis soboles est continuo quasi turget*).

This must have been aggravated by the fact that owing to want of teeth he could not chew, but had to bolt his food. In the matter of drink it is bluntly stated that he erred in quality, quantity, frequency, time, and order. He drank beer, ale, Spanish wine, sweet French wine, white wine and muscatelle. He loved all sweet wines and hated water and all watery drinks.

There was a tendency to gravel and he sometimes passed friable calculi, or rather, to use Mayerne's expression, "compact little masses of sand."

The King's legs were thin by nature and scarcely strong enough to bear the weight of his body. He did not walk until his sixth year; this weakness is explained by Mayerne as due to the bad milk of a drunken nurse. He had difficulty in swallowing owing to narrowness of the fauces, a peculiarity which Mayerne says he had inherited from his mother, and from his grandfather, James V. of Scotland. He was often troubled with colic and was subject to diarrhoea, which was made worse by mental irritation. Thus we are told that after the dissolution of Parliament 16$\frac{1}{11}$ when there had been much sharp discussion about the King's favourites, his bowels were much disturbed for a week. The death of his son in 1612 had a like effect. Occasionally there was haematuria. Jaundice was apt to occur if he was disturbed in mind or body. He had piles which bled almost daily. He was the subject of arthritis, and the clumsiness caused by this was the cause of frequent falls from horseback and other accidents.

Like most monarchs—and most men of common clay—the King was impatient of pain and urgent in demanding immediate relief, caring little about the cause of his suffering. Yet with the usual inconsistency of mankind, he scoffed at medicine, and declared that doctors were of little use. He held that the art of healing was based on uncertain conjectures, and attributed every good effect to Nature; if, relying on his own good judgement (says Mayerne), he did not altogether refuse needful help, he imprudently allowed Nature to go more quickly to its own destruction. He declared purgatives to be hurtful, particularly senna and all drugs that caused griping; he would take only mild aperients, and said that the only remedies of the kind needed were such as stimulated the rectum to empty itself. He would not submit to the use of enemas till 1613, and after that only occasionally. He once consented to take a cathartic, and to his physician—who expressed surprise that his stomach had not rebelled—he made the truly royal answer that all things were easy for him when he had made up his mind that they were to be done. He would not allow himself to be bled, though he once consented to the application of leeches. His haemorrhoidal flux must have made further depletion unnecessary.

Mayerne's account seems to have been drawn up for the guidance of the King's physicians, and he gives them a number of hints as to the treatment to be adopted in possible contingencies. He displays the shrewdness of the experienced court physician when he suggests that they should place before the King all the remedies which should be used "lest they should be accused of omitting or neglecting anything," and that they should show how zealous they were in their ministrations, and should thus make the royal will more ready to bend to the rules of medicine. They should not, he adds, force the King unwillingly to submit to the treatment required, but should persuade him to accept it of his own accord. A lesson for all who have the health of royal personages in their keeping!

James's life was, therefore, partly owing to constitutional causes and partly owing to his excesses in food and drink and to other indulgences, one long disease. On March 5th, 1625, he was attacked by a tertian ague. According to Lingard, "His indisposition was at first considered a tertian ague, afterwards the gout in the stomach; but whatever its real nature, under his obstinacy in refusing medicine, and the hesitation or ignorance of his physicians, it proved fatal."

He died on March 27th, and whatever his life may have been it may be said of him as of Falstaff that "'a made a good end." In the library of St. John's College, Oxford, there is a manuscript record of the edifying sentiments which he professed on his death-bed. It is at the end of a *Book of Common Prayer* which belonged to James and bears his arms on the cover. The prayers are written in a rather large hand on the fly-leaves with numbers on the right hand on the right hand page, and on the left on the left hand page. Some one has written in lead pencil the words "King" and "Bishop" before some of them, making them into versicles and responses, as follows:—

King. Into thy hands I commend my spirit for thou hast redeemed me o Lorde thou God of Truth. 1
Bishop. Veni Domine Jesu, veni cito. 2
King. Cupio dissolvi et esse cum Christo. 3
Bishop. I know that my Reedeemer liveth and that I shall rise out of the Earth in the last day. 4
King. I believe that I shall see the goodnes of the Lorde in the lande of the Living. 5
Bishop. Credo, Domine, adauge Tu Fidem meam. 6
King. In Te Domine speravi nō confundar in aeternum. 7
Bishop. Amen, dico Tibi, hodie mecum eris in Paradiso. 8
King. Thankes be unto God, who hath given us the victorie through our Lorde Jesus Christ. 9
Bishop. As by Adam all die, so by Christ shall all be made alive. 10
Martii 27, 1625.
King. Sav unto my soule I am thy Salvation. 11
Bishop. Euge, serve bone, intra in gaudium Dñi tui 12
King. A Corona ad Coronam, from a Crowne on Earth to a Crowne in heaven. 13
Bishop. I hearde a voice from heaven saying: Blessed are the dead that die in the Lord, for so saith the spirit. 14
King. Quia fecisti nos Domine pro Te, irrequietum est cor nostrū donec quiescat in Te. 15
King. Non timeo mori quia bonum habemus Dominum. 16
Bishop. Transibis a Gloria in Gloriam. 17
King. Bone Jesu, sis mihi Jesus. 18
Bishop. I hold all things as dung, so as I may winne Christ. 19
King. Beati qui habitant in Domo tua, Domine, in saecula saeculorum laudabunt te. 20
Bishop. Venite ad me omnes qui laboratis et onerati estis, et ego reficiam vos. 21
King. Totus sum tuus, fiat in me voluntas tua ô Deus. De vita et morte meâ facias secundum beneplacitum tuum: tantum fac, ut toto corde, et tota anima Tibi adhaeream in aeternum. 22
Deus meus, quamvis naturalis vitae amor recuset; cum fiduciâ tamen auxilij tui dicem cum Domino meo Jesu Christo. 23
"Pater mi, si non potest Calix hic transire, quin bibam illum, Fiat voluntas tua." 24
In pace in idipsum dormiam et requiescam, quoniam Tu in spe constituisti me. 25

Vel si licet alloqui aegrotum.

Memento qualem habes Patrem, qui sic te dilexit, ut unicum filium suum pro te redimendo dederit, Qualem Redemptorem qui seipsum pro te crucifigendum in manus hostium suorum tradidit, Qualem Consolatorem, omnis boni fontem, quem Christus promisit tecum permansurum usque ad Consummationem. Memento quales habeas conservos Angelos Dei a Deo

* Oxford. At the Clarendon Press. 1908.

missos, ut animam a corpore discedentem in sinum Abrahae, in consortium beatorum Angelorum, et Sanctorum deferant in Coelum.

Precatio.

Pater qui, ut me servum redimeres, unigenitum ffilium tuum dedisti, ne permitte, ut in me pereat, tantum pretium, scilicet, Sanguis, et Vita dilectissimi ffilii tui Dñi nrī Jesu Xp̃i quo me redemisti. 28

Domine, Calicem hunc mortis de manu tuâ libenter accepto, et offero illum Tibi; et ut dignanter acceptes in odorem suavitatis deprecor. 29

Deus propitius esto mihi peccatori. 30

I am now readie to be offered, and the time of my departure is at hand. I have fought a good fight. I have fulfilled my course. I have kept the faith. Henceforth there is layd up for me a crowne of Righteousness, which the Lord, the Righteous Judge, shall give me at that day, and to all that love his coming. 31

Come Lord Jesu, come quickly. 32

Behold I come quickly, and my Reward is with me. 33

Commendo me Tibi Sancta Trinitas, Pater, ffili, et Spiritus Sancte, qui in unitate Substantiae unus et verus est Deus. 34

Commendo me Tibi, Patri omnipotenti, qui me et omnia quae sunt visibilia et invisibilia creasti. 35

Commendo me Tibi, Domine Jesu Xp̃i, qui me morte tuâ redemisti; et Sanguine tuo pretioso peccata mea abluisti.

Commendo me Tibi, Spiritus Sancte, qui Ecclesiam Catholicam et omnia eius membra, et me humillimum Christi servum vivificas, sanctifi ceaet solaris.

Domne, dic verbo et sanabitur puer tuus. 36

Domine, hic ure hic seca, ut saltem in aeternum parcas. 37

Domine Deus meus, qui quos diligis castigas, sim quaeso de numero filiorum quos diligis in vitam aeternam; quandoquidem sum ex iis quos castigare dignaris. 38

Propitius esto mihi, ô Deus, et virtutem tribue ad bene ferendum la quae me ferre vis. 39

Cuicumque dat Deus gratiam quaerendi veniam signum dat ei, quod velit ignoscere et peccata condonare. 40

In te Domine speravi non confundar in aeternum. 41

The text given above has been transcribed for us from the actual book by the Very Reverend Dom Cuthbert Almond, O.S.B., of Oxford, whose kindness we hereby acknowledge. The book seems to have come into the possession of Sir William Paddy, one of the King's physicians, who, in a smaller and quite different handwriting, added the following note:

Being sent for to Thibaults butt two daies before the death of my souvraigne Lord and master King James: I held it my christian duetie to prepare hym, telling hym that ther was nothing left for me to doe (in the afternoon before his death the next daie att noone) butt to pray for his soule. Whereupon the Archbyshop and the Lord Keaper byshop of Lincolne demanded yf His Maiestie wold be pleased that they shold praye wth hym; whereunto he cheerfullie accorded. And after short praier these sentences were by the Bishop of Lincolne distinctlie pronounced unto hym, who wth his eies (the messengers of his heart) lyfted up unto Heaven, att the end of every sentence, gave to us All therby, a godlie Assurance of those graces and livelie Faith, wherwth He apprehended the merits of our Lord (and of our Lord) and onlie Saviour Christ Jesus, accordinglie as in his godlie Life he had often publiquelie p'fessed.

Will: Paddy:

Sir William Paddy was educated at St. John's College, and afterwards went to Leyden, where he proceeded Doctor of Medicine. In 1591 he was admitted a Fellow of the London College of Physicians, of which he was President in 1609, 1610, 1611, and 1618. He was physician to King James, and was highly thought of by Mayerne.

The statement of Mayerne, of which a summary has been given, shows that the King had for some time before his last illness been suffering from gout and gravel. When he died rumours of poison got about. Such charges were scattered about by interested persons who wished to delude the vulgar. We need not, however, pride ourselves on our greater enlightenment when even at the present day a King's death is attributed by silly or unscrupulous people to vaccines.

The charge of poisoning King James was brought against Buckingham. It is set forth in detail in a pamphlet by George Eglisham, who describes himself as having been one of the King's physicians for more than ten years.[1]

We quote the essential parts of it:

"The King being sick of a certain ague, and that in the spring, was of it selfe never found deadly; the Duke (of Buckingham) tooke his opportunitie when all the Kings Doctors of Physick were at dinner, upon the munday before the King dyed, without their knowledge or consent, offered to him a white powder to take: the which he a long time refused; but overcome with his flattering importunitie at length tooke it in wine, and immediately became worse and worse, falling into many swounings and pains, and violent fluxes of the belly so tormented, that his Majestie cryed out aloud of this white powder, would to God I had never taken it, it will cost me my life.

"In like manner also the Countesse of Buckingham, my Lord of Buckingham's mother, upon the Fryday after the Physicians being also absent, and at dinner, and not made acquainted with her doings, applyed a plaister to the King's heart and breast; whereupon he grew faint, short breathed, and in a great agony. Some of the physicians after dinner returning to see the King by the offensive smell of the plaister, perceived something to bee about him hurfull unto him and searched what it should be, found it out, and exclaimed that the King was poysoned. Then Buckingham entering, commanded the Physicians out of the roome, caused one of them to be committed prisoner to his own chamber, and another to be removed from Court, quarrelled with others of the King's servants in his sick Majesties owne presence so farre that hee offered to draw his sword against them in his Majesties sight. And Buckinghams mother kneeling downe before his Majestie cryed out with a brazen face, Justice, justice, Sir, I demand justice of your Majestie; His Majestie asked her for what? For that which their lives are no wayes sufficient to satisfie, for saying that my son and I have poysoned your Majestie. Poisoned, said he; with that turning himself, swounded, and she was removed. The Sunday after his Majesty dyed and Buckingham desired the Physicians who attended his Majestie to signe with their hands a writ of testimony, that the powder which he gave him, was a good and safe medicine, which they refused. . . . Immediately after his Majesties death, the Physician who was commanded to his chamber was set at libertie with a Caveat to hold his peace; the others threatened if they kept not good tongues in their heads.

"But in the meantime the King's body and head swelled above meassure his haire with the skin of his head stuck to the pillow, his nailes became loose upon his fingers and toes."

Norman Chevers, in a book entitled *Did James the First of England Die from the Effects of Poison or from Natural Causes?* says that in the King's last illness he became more tractable in the hands of his doctors. When those about him endeavoured to reassure him by quoting the proverb, "An ague in the spring is physic for a King," he replied, "True, but the saying is meant for a young King." Chevers says Joseph Mead wrote an account of the King's death to Sir Martin Sackville, which, it would appear, is not extant. In a second communication (dated April 9th, 1625, Ellis, first series, vol. iii, p. 182) he says: "I am told for certaine that, after Friday at night till the houre of his death, his tongue was swolne so big in his mouth, that either he could not speak at all, or not to be understood." A little before break of day, on the Sunday, he expressed a wish to have another interview with Prince Charles, who instantly rose and came, in his nightdress, to the King's bedside. The dying monarch endeavoured to raise himself on his pillow, as if he had something of importance to impart; but by this time his speech was inaudible. In his last moments, however, when the prayer commonly used at the hour of death was concluded, he repeated once or twice the words, "Veni, Domine Jesu!" and shortly afterwards ceased to breathe, without any appearance of pain.

The Lord Keeper closed the King's eyes with his own hand. Joseph Mead reports that, "when his body was opened by the physicians, they found his heart of an extraordinary bigness, all his vitalls sound, as also his head, which was very full of braines, but his blood was wonderfully tainted with melancholy, and the corruption thereof supposed the cause of his death." There is, according to Sir H. Ellis, in the Harleian Manuscript 383, the copy of a letter from a Mr. William Neve to Sir Thomas Hollandem concerning the embalmment and bringing to town of the body of King James. The writer says: "The King's body was, about the 29th of March, disbowelled, and his heart was found to be great but soft, his liver freshe as a young man's, one of his kidneys

[1] *The Fore-Runner of Revenge.* By George Eglisham, Doctor of Physick, and one of the Physicians to King James of happy memory, for his Majesties person, above ten years space. Printed at London, in the yeare 1642. *Concerning the poysoning of King James of happy memory, King of Great Britain.*

very good, but the other shrunke so little as they could hardly find it, wherein there was two stones. His lites and gall, blacke; judged to proceed of melancholy. The semyture of his head so stronge as they could hardly breake it open with a chesill and a sawe; and soe full of braynes as they could not, upon the openinge keepe them from spilling; a great mark of his infinite judgement."

A curious detail may be added. According to Sir Robert Gordon, Tutor of Sutherland, Gentleman Ordinary of James's privy chamber, "the dead bodie of that mightie monarch, for the space of eight dayes that it abode at Tiboll's, lay naked, without any cover saveing a whyt sheet."

Those who are interested in the subject may consult *The Secret History of the Court of James I*, containing (i) Osborne's Traditional Memoirs; (ii) Sir Anthony Welldon's Court and Characters of King James; (iii) Aulicus Coquinariae; (iv) Sir Edward Peyton's Divine Catastrophe of the House of Stuarts. (James Ballantyne and Co., Edinburgh, 1811.)

(*To be continued.*)

Dr. E. P. Clippingdale writes: "I have been fascinated by the article, 'Some Royal Death-beds.' I see further contributions are invited. I do not know whether the enclosed notes are suitable."

Henry VIII suffered many years before his death from a "sorre legge," for which he was treated by a "meane practizer at Maidstone," Thomas Vicary, who subsequently became Sergeant-Surgeon (1531). The King had also a fistula, for which he was treated by Sir John Alyffe, Sergeant-Surgeon, in 1539. (Young's *Annals of the Barber Surgeons.*)

Edward VI was left much to the care of nurses. His father, anxious about "his most dearest sonne," sent him to Hampstead, in Hertfordshire, which then had the reputation of being curative for the sick children of London. The young King kept a diary, and in this he made an entry on April 2nd, 1552 (about a year before he died): "This day I fell sike of the mesles and small pokkes." This matter I have dealt with in a paper, "Hampstead as a Health Resort for Children in the Reign of Henry VIII." (*Journal of Balneology and Climatology*, vol. ix.)

Mary Tudor's physician was Dr. Caesar à Dalmariis, a naturalized Italian. (Munk's *Roll.*)

Queen Elizabeth must have retained consciousness almost to the last, for those around her, bending over her, heard her say (in answer to a question as to whom she wished to succeed her), in a very feeble voice, "Let a good man follow me." They said, "Does your Majesty mean your cousin James?" to which the dying Queen nodded her head in assent. (Recent correspondence in *Notes and Queries.*)

LITERARY NOTES.

THE following extract, given in James Dennistoun's *Memoirs of the Dukes of Urbino*, shows that at the Court of the Urbino during the latter part of the fifteenth century people were neither so dirty nor so foul and gluttonous in their feeding as they were elsewhere. It is copied from a volume of regulations compiled for the Court of Guidobaldo I, Duke of Urbino, A.D. 1472–1508 (vol. i, pp. 309–10). It states that to all persons composing the ducal household unexceptionable manners were indispensable. In those of higher rank there was further required competent talents and learning, a grave deportment and fluency of speech. The servants must be of steady habits and respectable character; regular in all private transactions; of good address, modest, and graceful; willing and neat-handed in their service. There is likewise inculcated the most scrupulous personal cleanliness, especially of hands, with particular injunctions as to frequent ablutions, and extraordinary precautions against the unpleasant effects of hot weather on their persons and clothing; in case of need medical treatment is enjoined to correct the breath. Those who wore livery had two suits a year, generally of fustian, though to some silk doublets were given for summer use. They had a mid-day meal and a supper: the former usually consisted of fruit, soup, and boiled meat; the latter of salads and boiled meat. This was varied on Fridays and vigil fasts by dinners of fish, eggs, and cheese; suppers of bread, wine, and salads. Saturdays were semi-fasts, when they dined on soup and eggs, and supped on soup and cheese. The upper table offered but few luxuries in addition to this plain fare, such as occasionally roasts, fowls, and pastry, with a more liberal allowance of eggs and cheese on meagre days. Of the diet at the ducal table, we find sparing and unsatisfactory notices; but its chief difference from that of the attendants seems to have consisted in the more liberal use of sweet herbs and fruit. The latter were presented in singular order: cherries and figs before dinner; after it, pears, apples, peaches, nuts, almonds; before supper, melons and grapes. The splendour of the table service seems to have been more looked to than its supplies, and many rules are given as to the covered silver platters on which meals were brought up, the silver goblets and glass caraffes for wine, the fine napery, and the ornamental flowers. The regulations for the Duke's chamber service indicate scrupulous cleanliness, both as to ablutions in perfumed water and frequent change of clothing, in strict conformance to the directions of physicians and astrologers. Among the conveniences enumerated for his bedroom are a bell, a night-light, and in cold weather a fire. An attendant slept by him without undressing, also a clerk in the guard-room within call. The music provided to accompany the Duke on his rides seems to have been somewhat miscellaneous—a company of bagpipers, a sackbut, four trumpets, three drums, with a herald or pursuivant. Guidobaldo's courtiers had, in fact, as Falstaff was recommended by the Prince to do, purged and lived cleanly, as gentlemen should do. If they did not lead an ideally simple life, they were much nearer it than many more brilliant courts have been in later days. The Dukes of Urbino appear to have been exceptionally enlightened rulers, if we may judge from the following extract from a paper of instructions written by Duke Francesco Maria II. of Urbino, to his son (about the year 1607) in case he should be left an orphan at an early age:

> Eat and drink of everything indifferently, without reference to diet such as is recommended by physicians, of whom keep aloof while you can, never calling them in until you are ill; but when really so, obey them strictly, committing yourself first to God, and secondly to their skill.

The last words convey advice that should be taken to heart by all patients of whatever degree. They should be written in letters of gold in the palaces of kings, for, as all records show, they are as apt to think themselves *supra medicinam* as the Emperor Sigismund said he was *supra grammaticam.*

THE DEATH OF KING EDWARD.

THE Council of Epsom College has sent the following addresses to His Majesty the King and to her Majesty Queen Alexandra:

TO THE KING'S MOST EXCELLENT MAJESTY.

May it please Your Majesty,

We, the Council of Epsom College, beg leave to approach Your Majesty for the purpose of conveying the expression of our heartfelt sorrow at the bereavement which has befallen Your Majesty, the members of the Royal Family, and the whole Empire by the death of our beloved King.

We hasten to assure Your Majesty of our deep sympathy, not only as humble and loyal subjects, but also as representing an institution of which your august father was the Patron, and in which Your Majesty has so recently as in the year 1903 been graciously pleased to take a personal interest.

We also desire to tender our congratulations on Your Majesty's accession to the Throne, with the earnest wish that Your Majesty may long be spared to reign over a happy and prosperous Empire.

ROSEBERY, President. HENRY MORRIS, Treasurer.
W. S. CHURCH, Chairman of the Council. J. BERNARD LAMB, Secretary.

May 21st.

TO HER MAJESTY QUEEN ALEXANDRA.

May it please Your Majesty,

We, the Council of Epsom College, desire to offer to Your Majesty the expression of our profound grief at the irreparable loss which has befallen Your Majesty by the death of our beloved Sovereign King Edward VII of blessed and glorious memory. We sincerely hope that Your Majesty may long be spared to receive the love of a devoted people.

ROSEBERY, President. HENRY MORRIS, Treasurer.
W. S. CHURCH, Chairman of the Council. J. BERNARD LAMB, Secretary.

May 21st.

British Medical Journal.

SATURDAY, JUNE 4TH, 1910.

DISCIPLINARY CASES BEFORE THE MEDICAL COUNCIL.

THE time of the summer session of the General Medical Council was this year very largely occupied by the hearing of disciplinary cases. Several of these involved considerations of great general importance both to the profession and to the public, and fully justified the amount of time and care devoted to them. In three the complainant was the British Medical Association, and we conceive that any impartial student of the reports of the hearing of these cases published in the SUPPLEMENT for this week will agree that in undertaking to lay complaints before the Council the Association was discharging a public duty.

One of these was of a type with which those who have followed the business of the General Medical Council in recent years are familiar, since a good many cases of the sort have been brought under its consideration from time to time; it was a case of canvassing, and the General Medical Council in 1905 gave notice that any registered medical practitioner who employed or sanctioned the employment of agents or canvassers for the purpose of procuring persons to become his patients would render himself liable to be charged under the twenty-ninth section of the Medical Act 1858 with infamous conduct in a professional respect. In this case the respondent practitioner through his solicitor admitted fully and freely that the main allegations with regard to canvassing by a collector were true, but stated that when he discovered the facts in March last, at a time when there was no suggestion of proceedings against him, he immediately dropped all connexion with the society and had not since attended any patients connected with it. He accepted without reservation full responsibility for the actions of the collector and admitted that he was professionally negligent in failing to make more careful inquiry, expressed his regret for having transgressed, and promised to have no further connexion with any society in which canvassing or collecting by agents was involved. In view of this apology the Medical Secretary, acting for the Association, withdrew the case, and the President undertook that its nature should be placed on record, together with an intimation that the Council, after hearing statements from the representatives of both sides, agreed to its withdrawal.

Two other cases in which the Association acted as complainant are of particular interest, because they bring into prominence what must be admitted to be a defect in the machinery of the Council when dealing with disciplinary cases. The defect exists in regard to all such cases save those in which the registered medical practitioner has been convicted of a felony or misdemeanour (in Scotland of a crime or offence), but becomes particularly obvious when, as in these cases, the principles or facts involved have an obvious and direct bearing upon public affairs. The interpretation put by the General Medical Council upon the statutory powers conferred upon it by the Medical Act is such that it does not consider itself competent to investigate a case on its own initiative, but holds that the charge must be brought before it by a complainant. The Act empowers the General Medical Council, if it see fit, to direct the erasure from the *Register* of the name of a medical practitioner who "shall after due inquiry be judged by the General Council to have been guilty of infamous conduct in any professional respect." The standing order under which the Council acts in these respects provides that "whenever information reaches the office of the Council that a registered medical practitioner . . . has been under the censure of any judicial or other competent authority in relation to his professional character, or has been guilty of conduct which *prima facie* constitutes infamous conduct in a professional respect," the Registrar shall make a report to the President, who may cause the matter to be brought before the Penal Cases Committee. The only exception to the requirement as to a complainant which seems to be recognized by the Council is when the facts are brought to its notice by a public authority. Instances in which the Council has taken action in the absence of a complainant are afforded by a case heard before it last November, when a practitioner was struck off the *Medical Register* for allowing another medical practitioner, in the circumstances then reported, to perform his duties as certifying factory surgeon, and a somewhat similar case heard this session upon information brought to the notice of the Council by the City of Leeds Education Department. In the latter instance the medical practitioner was charged with being associated in practice with an unqualified person and allowing him to sign what purported to be certificates of unfitness of children to attend school.

In one of the cases in which the British Medical Association was the complainant during the session just terminated an unqualified assistant, styled a dispenser, had attended a confinement; the patient was not seen by any qualified principal until she was in such condition from puerperal septicaemia that her immediate removal to a workhouse infirmary was deemed necessary. There the acting resident medical officer cleared out the uterus, removing portions of retained placenta, and gave an intrauterine douche. The patient died five days later and was buried, but the facts having come to the knowledge of the Medical Officer of Health for Sheffield the body was exhumed and an inquest held. The *post-mortem* examination, as was almost inevitable, revealed nothing material, and a verdict of death from natural causes was returned. The defence offered before the Council by the practitioner concerned was that the unqualified dispenser merely went in an emergency, and that it was owing to a chapter of accidents that no qualified person saw the patient until she was far gone.

In the other case the complaint was that a registered medical practitioner had associated himself as a member of its committee and also as one of its surgeons with an institution for the treatment of eye, ear, nose, and throat diseases, which advertised by pamphlets and in the public press for paying patients, the charges being half a guinea at the first and 5s. at each subsequent attendance. In defence it was claimed that the institution was supported by a gentleman who had, from philanthropic motives, guaranteed a considerable sum for its establishment, and that it was governed by a committee of which the practitioner was a member. The practitioner and his legal representative were invited by the Council to adduce evidence as to the bona fides of the institution

by calling some member of its committee, or its secretary, or by producing its books, and for this purpose the case was adjourned. When the case was called on next day neither the practitioner nor his legal representative appeared and no such evidence was tendered, but, instead, a letter from the practitioner was read requesting that his name should be removed from the *Medical Register*. It was, of course, impossible to grant this request with an unfinished hearing of the charge against him hanging over his head, and the Council decided to adjourn the further consideration of the case to the November session, in order to give the respondent the opportunity of bringing additional evidence in answer to the charge.

The action of the British Medical Association in appearing as complainants before the General Medical Council in these cases was taken in pursuance of the decision of the Representative Meeting in 1906, confirmed by the Representative Meetings in 1907 and 1908. The Council deputed to the Central Ethical Committee the duty of acting in this respect on behalf of the Association. The cases just heard were the first brought to the notice of the Committee in which it was satisfied that the circumstances called for its intervention.

The case at Sheffield was reported to the General Medical Council by the medical officer of health and the coroner. The answer returned on behalf of the Council was to the effect that though there was a prima facie case for investigation, the requirement that the facts must be brought formally before the Council by a complainant would be insisted on. The case had, as will readily be understood, excited a great deal of attention in Sheffield, and the medical profession in that city thought that for the honour of the profession some action should be taken, but felt also that if any individual member of the profession came forward as a complainant he would lay himself open to the charge of professional jealousy, and that even if the general body of the profession in Sheffield through the local Division of the Association deputed some person to act as complainant a similar charge might be made. The decision of the Representative Meeting that the Central Council of the Association, as representing the whole body, should be authorized to act provided a solution of the difficulty, and the investigation of the circumstances was accordingly undertaken by the Central Ethical Committee. The case was carefully prepared by the Medical Secretary and the Solicitor to the Association, and ably presented by the former to the Council, with the result shown in the report published in the SUPPLEMENT. It is perhaps unfortunate that there is no officer of the General Medical Council who can discharge in relation to it the duties of a public prosecutor in cases raising the larger general interests of the public and of the profession. But so long as the Council adheres to the interpretation of its powers referred to above, the honour and interests of the profession will be best safeguarded by the British Medical Association continuing the policy of acting as complainant in suitable cases before the General Medical Council.

ENVIRONMENT AND HEREDITY.

AS is well known the staff of the Galton Laboratory for National Eugenics has recently devoted a good deal of attention to researches having for their aim the determination of the parts played respectively by environment and inheritance in shaping the mental and physical destinies of the next generation. Two further contributions to this subject have just been issued[1]—one, by Mr. David Heron, deals with the influence of defective physique and unfavourable home environment on the intelligence of school children; the other, by Miss Elderton and Professor Karl Pearson, treats of the influence of parental alcoholism on the physique and ability of the offspring.

Mr. Heron's data comprise material collected in fourteen London elementary schools under the instructions of the Education Committee of the London County Council, who generously placed the facts at the disposal of the Galton Laboratory. Mr. Heron acknowledges his indebtedness both to the committee and to Dr. Kerr for ready help and advice in connexion with the data.

As the problem was to measure the relation between ability and various conditions, it was important to consider how far the classification of intelligence was satisfactory. The variations in the percentages of children placed in the different classes of intelligence at individual schools were so wide that the scale adopted could not be regarded as a good one. For instance, the percentage of children classed as "brilliant" varied from 3 to 33 among the boys, and from 1 to 33 among the girls. Evidently different teachers attached different meanings to the term "brilliant." The author remarks: "It will be seen at once that from this standpoint this pioneer survey has a most valuable lesson to teach us. There must be a preliminary standardization of the teachers who are called upon to estimate the intelligence of their pupils. It is idle to assert that there is no such thing as 'general intelligence'; it may be difficult to find a satisfactory means of measuring it, but measure it we must if we are to obtain any useful facts from these school surveys."

Owing to the non-uniformity of the scale, it was necessary to analyse the returns from individual schools, thus diminishing the size of the sample and increasing the "probable errors" of the constants deduced. The correlation between mental capacity and the following characters was determined for each school separately—namely, intelligence, with age, height, weight, condition of the teeth, condition of the clothing, state of nutrition, state of cleanliness, condition of the cervical glands, tonsils, adenoids, and power of hearing; the relationship between age and various physical characters was also measured. Although some of the coefficients of correlation between mental capacity and environmental conditions are so large in comparison with their "probable errors" that some degree of significant relationship might be predicated, yet their absolute magnitudes are so small, and they vary so much from school to school, that but little weight can be attached to them. For instance, the correlation between the state of nutrition and mental capacity for the girls in School 2 is $+ .22 \pm .05$, a significant positive value; for the boys in the same school, however, the coefficient is $- .16 \pm .04$, actually of opposite sign! The value for girls in School 12 is $- .14 \pm .03$. Evidently positive conclusions are not to be based upon such results. The author accordingly holds that the results of this survey do not support the belief that the home environment, so far as it can

[1] *The Influence of Defective Physique and Unfavourable Home Environment on the Intelligence of School Children*, by David Heron, M.A. (Pp. 60.) *A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring*, by Ethel M. Elderton, with the assistance of Karl Pearson, F.R.S. (Pp. 46.) Eugenic Laboratory Memoirs. London: Dulau and Co. 1910.

be measured by the characters discussed, exerts any marked influence upon the intelligence of school children. He is disposed to believe that this is due to there being, in fact, no close relationship between environment and intelligence. It may be asserted that the result is due to the imperfection of the data, that better material would have yielded a more consistent and definite answer. Mr. Heron might, perhaps, legitimately retort that the *onus probandi* is with the objector. We think those familiar with conditions of life in the slums might differ from certain statements of Mr. Heron. He remarks that "it may be presumed that the home environment is the same for both boys and girls," but the presumption is not, perhaps, warranted. We are rather disposed to think that, in general, the environment of the girl may be less satisfactory than that of the boy from the same home, especially when the family contains young children. After school hours a girl sometimes has to act as a domestic helper and nursemaid to her younger brothers and sisters—duties not so often delegated to the schoolboy. Thus there may well be a sexual difference in the environment of members of the same family.

In the second memoir under notice Miss Elderton and Professor Pearson deal with the statistics of the Edinburgh Charity Organization Society's Report and with a manuscript account of the children in the special schools of Manchester provided by Miss Mary Dendy. The latter material is, of course, not a random sample, since at least one child in each family is mentally defective.

The analysis is conducted on the same general lines as that of Mr. Heron's paper. The results may be summarized in the following terms:

1. There is a higher death-rate among the offspring of alcoholic than among those of sober parents. This difference is somewhat more marked in the case of an alcoholic mother than when the father alone drinks. It is sensibly higher when the mother drinks "in bouts" than when she is a habitual drinker. This would appear to suggest that the cause is rather a greater frequency of accidents and gross carelessness than a toxic influence. Alcoholic parents appear somewhat more fertile than sober ones, the net family of the temperate being hardly larger than the net family of the alcoholic.

2. There is a very small but possibly significant correlation between alcoholism in the mother and poverty of physique in the child. There is no significant relation between paternal alcoholism and the height or weight of the child.

3. The wages of the alcoholic as contrasted with those of the sober parent show a slight inferiority compatible with the employers' dislike of an alcoholic employee, but wholly inconsistent with a marked mental or physical inferiority in the alcoholic parent.

4. The general health of the children of alcoholic parents appears to be slightly better than that of the children of sober parents. This may be partly due to the weeding out of delicate children by the higher infantile death-rate in the former class.

5. There is no evidence that parental alcoholism is the source of mental defect in children.

6. There is no measurable relation between the intelligence of children and the alcoholism of their parents.

7. The same conclusion applies to the vision of children and to the frequency of disease of the eyes or eyelids.

We have quoted most of Miss Elderton and Professor Pearson's conclusions without comment. That they have adopted the best, indeed the only adequate, method of statistical analysis is, in our opinion, beyond doubt. Whether the data they have used are sufficient to support a final judgement on this matter is a question on which we have no intention of entering. One remark, however, we think it well to make. The large number of persons who are probably even now girding on their armour with the intention of smiting Professor Pearson and his pupils should realize exactly what these investigators are teaching. They suggest that parental alcoholism, bad housing and other environmental evils do not produce large effects upon the next generation. They do not deny that these things are evils; they simply doubt whether they are evils visited upon the children and to the third and fourth generation. Even if these views merited universal acceptation—as to which we express no opinion—it would still be our duty to strive at least as hard as at present for the amelioration of environmental conditions. Hunger, filth, and alcoholic excess *may* not affect the intelligence and physique of the rising generation, but, beyond all question, they materially affect the health and happiness of the generation in being. If an imperfect or secondhand acquaintance with these memoirs were to lead to any weakening in the struggle to secure better environmental conditions, much harm would have been done—harm which, we think, would be deplored by no one more heartily than by the authors of the papers themselves. We have no doubt that the publications of the Eugenics Laboratory will be received, by the medical profession at least, with the respect which is the proper acknowledgement of all genuine scientific work.

THE CROONIAN LECTURE.

IF one were asked to name what might be considered the most essential common characteristic of living matter—or, indeed, of all forms of matter—the answer would unhesitatingly be summed up in the single word, "change." The idea has long been associated with biological phenomena, and has been given concrete expression on numerous occasions. Physical entities in comparison gave the impression of the immutable, and inspired a confidence as in something absolutely stable and steadfast. It is gradually being borne in upon us, however, that the elusive, impenetrable element of change is no less characteristic of the one than of the other, and that the only difference is a matter of time or of rapidity of action as measured by the human span. Biologically, change always suggests environment, implying that the process is measured or estimated not so much with reference to the immediately previous state of the individual as with reference to the innumerable other individuals with which it is surrounded and with which its whole life interacts. The effect, on the whole, is of importance incomparably greater than that on the unit. At the same time the converse is not without its importance and interest, and it is this aspect of the phenomenon which is most commonly studied. It formed the subject of the Croonian lecture delivered before the Royal Society on May 26th by Professor Klebs of Heidelberg, the title being "Alterations of the Development and Forms of Plants as a Result of Environment." Two examples in particular were chosen, one from the lower plants, another from the flowering plants. The well-known fungus *Saprolegnia* shows three distinct stages of development, which, under ordinary circumstances, follow each other with regularity till the

fungus dies. By ascertaining the conditions which initiate these successive stages and applying them, it is possible to produce any stage at will, and, moreover, by the same means their order can be altered. For instance, under ideally favourable conditions of nutrition the fungus must grow continuously without propagating and without dying, and it is only some alteration in environment which provides the stimulus towards a new stage in development. The complicated structure of the higher plants renders such experiments more difficult. A species of *Sempervivum* was taken to show how far the development of such plants depends on environment. It forms a rosette composed of a short stem covered with thick succulent leaves. The rosette produces asexually daughter rosettes, of which each comes to flower under suitable conditions, and dies after the ripening of seeds. When a plant is destined to flower, but has as yet no recognizable rudiments, it is said to be ripe to flower. Flowering consists of three essential stages—lengthening of the stem, production of terminal branches, and the birth of the flowers. Now, a number of alterations can be experimentally induced in this process. Thus, a rosette ripe to flower can be transformed again into a vegetative one; lengthening can occur without a sequent flowering, and conversely flowers may be made to grow on stems which have not lengthened. It is evident, then, that a new series of forms can be produced through replacing flowers by leaf rosettes on any part of the inflorescence. The flowers may be entirely replaced by rosettes or a mixture of the two. The process can be carried to the individual flowers, all the component parts of which, the sepals, petals, stamens and carpels can be altered. Further, each of these parts can be changed into the other, as, for instance, petals into stamens. It has also been shown that many of these remarkable and apparently unnatural changes can be transmitted to at least the following generation. The experiments on which these remarks are founded are being continued, and will no doubt lead to other surprising results.

THE OLDEST EGYPTIAN MUMMY.

IN an address delivered before the Royal Philosophical Society of Glasgow, on April 6th, an abstract of which has kindly been sent to us by the author, Professor Elliot Smith gives a sketch of the history of mummification in Egypt. To appreciate the motives which impelled the ancient Egyptians to invent the art of embalming, he says it is necessary to throw our minds back nearly sixty centuries to a period long before the amalgamation of the kingdoms of Upper and Lower Egypt was effected and the first dynasty of Egypt founded (about 3400 B.C.). Then predynastic Egyptians were in the habit of burying their dead in shallow holes scraped in the soil immediately beyond the limits of the narrow strip of cultivated land. As the result of placing the body in hot dry sand, it frequently happened that, instead of undergoing a process of decay, it became desiccated and preserved in an incorrupted form for an indefinite time. The burial of valuable and useful objects with the dead naturally led to grave robbing, which was already common in the earliest known prehistoric times in Egypt. This plundering of graves must have taught the people at large that the forces of Nature were often sufficient to preserve a dead body. In this way it became a part of the religion of the Egyptians to regard the preservation of the body as the condition of the attainment of immortality; they believed that in addition to the soul (*Ba*) "which flew to the gods" there was a second soul (*Ka*) which remained on earth and dwelt in the body or in its neighbourhood. The predynastic Egyptians were acquainted with copper, and the development of their knowledge of the uses to which this metal might be put in fashioning tools gave a great impulse to the arts of the carpenter and stonemason. The increased technical skill thus acquired was at once applied to the invention of the coffin, the sarcophagus, and the rock-cut tomb. But the early Egyptians soon learnt that the body when placed in a coffin or buried in a rock tomb usually underwent decomposition. It was a widespread belief that the stone "ate the flesh"—hence the word *sarcophagus*. Artificial mummification, therefore, had its origin in an attempt to deprive the grave of its victory. The Egyptians had long been familiar with the materials used for embalming. Salt and soda occur in the deserts fringing the Nile Valley, ready at hand and in enormous quantities; and even in predynastic times the Egyptian woman had learnt to paint her face; resin, such as the embalmer then began to employ, entered into the composition of these cosmetics. Professor Elliot Smith says that if this hypothesis as to the origin of mummification is correct, it might be expected that some evidence of embalming would be found soon after the invention of coffins and rock tombs—that is to say, about the beginning of the dynastic period. But he found, on examining the mummies in the Cairo Museum, that there was no unquestionably authentic mummy earlier than that of the last King of the seventeenth dynasty (about 1580 B.C.). There was thus a gap of eighteen centuries between the time when, on Professor Elliot Smith's hypothesis, the earliest attempts at embalming were made and the most ancient actual mummy in the Cairo Museum. There was, however, definite evidence that the embalmer's art was practised in Egypt as early as 2000 B.C., possibly even a thousand years before that time. Mummies were found at the Sakkara and Lisht Pyramids dating from the tenth or eleventh dynasties; these were so fragile that it was not possible to move them without reducing them to bones and powder. This seemed to explain why no actual mummies of this period were found in museums. But there is in the Museum of the Royal College of Surgeons of England a mummy of the time of Snefra (third or fourth dynasty) found by Professor Flinders Petrie in the neighbourhood of the Medum Pyramid in 1891. The researches which Dr. George A. Reisner has been carrying out at the Giza Pyramids have supplied data which demonstrate that this mummy was embalmed at the time of the fifth dynasty (about 2700 B.C.). This is therefore more than eleven centuries older than any other actual mummy, that is to say, not mere bones, hitherto found, and Professor Elliot Smith thinks it highly probable that attempts at embalming were made during the six or seven centuries before the date assigned to the mummy in question, which is supposed to be that of a high official called Ranefer. The reason why this mummy has come down to our times in such a remarkably good state of preservation is that it was encased in a hard and thick carapace of resinous paste which had been moulded, when soft, into the form of the body. The head and face had been particularly well modelled; the wig was faithfully represented, and coloured brown with a resinous paste painted on the surface of the mask; the features (the nose is now destroyed) were carefully fashioned; the eyes (pupils, eyelids, and eyebrows) were indicated by malachite paint; and the moustache, represented in Egyptian statues only at the period assigned to this mummy, was painted on the upper lip of the mask with brown resinous paste like that employed to represent the hair of the wig.

FABRICIUS VON HILDEN.

A memorial of the famous surgeon Wilhelm Fabry, better known in medical history as Gulielmus Fabricius Hildanus, is to be unveiled at Hilden, near Düsseldorf, on June 25th, the three hundred and fiftieth anniversary of his birth. Fabricius Hildanus was the father of German surgery. He received his preliminary education at what he calls the "Academy" of Cologne. Owing to the untimely death of his father, a law writer, he had to leave school in his thirteenth year, and had to give up what had been the object of his ambition—to study medicine at a university. For the next three years he seems to have had to shift for himself. During that period he contrived somehow to acquire an unusual knowledge of the classics. By a friend of his family, the Netherlandish poet Karl Utenhov, he was in his sixteenth year apprenticed to a surgeon named Dumgens at Neuss. With him Fabricius remained till 1580, when he became assistant to Cosmos Slot, or Slotanus, to use the Latinized form fashionable in that day. Slot was surgeon-barber to Duke Wilhelm of Jülich-Cleve. In the service of that magnate Fabricius remained till 1585. After a short stay at Metz he attached himself to a well-known surgeon of Geneva, Jean Guffon. With him he stayed three years, during which period he married Maria Colinetia. He next visited France, after a time returning to his native place Hilden. In 1591 he moved to Cologne in order to avail himself of the advantages of the university, where he worked hard at anatomy under Manlius. At Cologne he published his first work, *De gangraena et sphacelo*, which brought him great fame; it went through eleven editions, and was translated into Latin and French. Seeking ever for fresh woods and pastures new, he went to Lausanne. Next we find him in Poland; then back at Cologne, where he stayed two years, when he again betook himself to Lausanne. In 1602 he was appointed medical officer to the town of Payerne, in the Wandt Canton. There he remained nine years, when he returned to Lausanne. In 1614 he accepted the offer of the post of medical officer to the city of Berne, where he seems finally to have settled. He was greatly respected, and received high civic honour. He died of gout and asthma in 1634, aged 74. Fabricius Hildanus had a European reputation as an operating surgeon and devised many new procedures. In his wife he had a helpmate most suitable to a surgeon, as the following story related by himself shows: "It so befell me at Paterniam when I was about to cut off the thigh of a man of forty yeares of age, and ready to use the saw and cauteries. For the sick man no sooner began to roare out, but all ranne away except onely my eldest sonne, who was then but little and to whom I had committed the holding of the thigh for forme onely; and but that my wife, then great with child, came running out of the next chamber and clapt hold of the Patient's Thorax, both she and myself had been in extreme danger." Among his works, in addition to the customary "centuries" of cases which every clinician of those days compiled, as a modern cricketer "compiles" runs, are treatises on burns, on stone, on "a Christian manner of eating," and on the preservation of health by the use of hot springs; the last was the outcome of his own experience as a sufferer from gout and nephritis. Hildanus was a deeply religious man and conscientious in his professional work, chary of operating unless there was a good prospect of cure. He is said to have corresponded with 150 physicians and learned men. How in his wandering life he found time to do and write so much is a mystery, more especially as he must have spent a considerable part of his time in educating himself. He left a comfortable fortune at his death, thus falsifying the proverb about the rolling stone.

PITCH CANCER.

For many years the profession has been familiar with chimney sweep's cancer, and by his lectures published in the British Medical Journal, 1892, vol. ii, p. 68, Mr. H. T. Butlin added considerably to our knowledge of the subject, and at the same time drew attention to the irritating effects of tar-like bodies upon the skin. Since then there has been slowly accumulating a mass of evidence to show that the handling or use of pitch, tar, and tarry products is frequently followed by structural alterations of the skin akin to, if not identical with, epithelioma. This subject was brought under the notice of the Committee on Compensation for Industrial Diseases; and while there was a general consensus of opinion that the cancerous conditions observed in "pitch ulceration" might be prevented by scrupulous cleanliness, there was a feeling also that occasionally the lesions might develop in those who had taken all reasonable care in this respect. Attention is directed in the report[1] on ulceration of the skin and epitheliomatous cancer occurring among men engaged in the manufacture of patent fuel and grease, presented recently by Dr. T. M. Legge, to the large number of cases of scrotal cancer notified by Dr. Jabez Thomas of Swansea among the briquette makers of South Wales, to cases notified by Dr. A. Paterson of Cardiff, and to grease workers' cancer, mentioned by Sir Thomas Oliver in a paper read in the Industrial Hygiene Section of the British Medical Association in 1908. Dr. Legge points out that the conditions of work in factories where patent fuel or briquettes are manufactured differ from those in which tar is distilled, as well as from those industries where tar, or in its place anthracene is simply extensively used. In grease and anthracene workers the arms and hands suffer, whereas in patent fuel makers it is the scrotum which becomes affected. Dr. Legge therefore suggests that there should be some limitation in the application of Home Office regulations so as to suit the conditions of oil and grease works. It is believed that the incidence of epithelioma in briquette makers is increasing owing to the fact that since the extraction of anthracene has become less profitable this material is allowed to remain in the pitch. In the manufacture of briquettes 10 parts of pitch and 90 of coal dust are ground together, then moistened by steam and pressed into moulds. It is the men who are engaged in the pitch bin and in grinding the material who suffer most from affections of the skin. In 19.1 per cent. of patent fuel makers who had suffered, the face was found to be affected, in 7.7 the arms, and in 2 per cent. the hands, whereas in grease workers the numbers were respectively 12.9, 29, and 12 9. The hair follicles and sebaceous glands of briquette workers become plugged with pitch. Shotty papules form in consequence of this obstruction, and here and there the skin becomes irregularly pigmented, and the epithelium is transformed into warty growths. Occasionally these worts assume malignant characters and ulcerate. Dr. Legge recommends bathing every alternate day. He shows that at certain industrial concerns, both in England and on the Continent, baths have been provided for the men, and that the whole process of bathing for the establishment can be got through without undue loss of time to the workpeople. Overalls ought to be worn and goggles to prevent the eyes

[1] *Special Report on Ulceration of the Skin and Epitheliomatous Cancer in the Manufacture of Patent Fuel and of Grease.* By T. M. Legge, M.D., H.M. Medical Inspector of Factories. London: Darling and Son, Ltd., 34-40, Bacon Street, E.

being injured by the splashing of the hot material' since experience has shown that eyes injured under these circumstances heal with difficulty,

BERI-BERI.

FOOD theories as to the origin of beri-beri are strongly held in the East, and on the whole seem to be gaining ground. The bacteriological evidence which, when first brought forward by Baelz and Scheube, seemed so convincing, has not been confirmed, or at least there has been so much conflicting evidence, that up to the present no specific organism has been proved to be present. One of the latest views is that it depends upon over-complete shelling of the rice. Thus, Osler states that in Java the proportion of cases is 1 to 39 where the rice is eaten completely shelled, and 1 to 10.000 when the grain is eaten with its pericarp, while in some places the disease has disappeared after the substitution of unshelled for shelled rice. This question has been investigated by Dr. Henry Fraser, Director of the Institute for Medical Research, Federated Malay States, and Dr. A. T. Stanton, bacteriologist to the Institute.[1] They claim that the theory originated by Braddon now rests on a solid body of evidence, as it is supported by the observations of Fletcher and Lucy in the Malay States, of Dubruel in French Indo-China, and of Gilmore Ellis, whose paper was published last year in this JOURNAL (October 2nd, page 935). Although there has been this consensus of opinion respecting the power of white rice to produce the disease, the mechanism by which the result is effected has remained obscure. Some attribute it to diseased rice, others to the presence of a supposed poison in the rice for which an equally hypothetical antidote exists in the pericarp. Following these lines of thought Fraser and Stanton, of whose investigation we gave some account in our issue of April 16th, have experimented on fowls, and found that when fed on white rice they suffer from a form of polyneuritis, which they believe to be analogous to beri-beri, and which, at any rate, serves as an indicator of the beri-beri producing power of a given sample of rice. On the other hand, if the rice is parboiled the fowls remained quite healthy. Unhusked rice is spoken of in the East as "padhi"; from 40 parts of padhi when cleaned, 25 parts of rice are obtained, 10 of husks, and 5 of polishings. Twelve fowls fed on padhi remained healthy; of twelve fed on white rice six suffered from polyneuritis; of twelve fed on white rice and polishings all remained healthy; lastly, of twelve fed on the padhi husked in the primitive Malay method by a native woman, all remained healthy. Although parboiled rice was unable to produce the disease if it was extracted with alcohol and then dried in the sun, fowls fed on it contracted polyneuritis. Following a suggestion made by Dr. F. W. Mott, it was decided to determine the amount of phosphorus calculated as phosphorus pentoxide in the various kinds of rice in use. It was found to be greatly deficient in white rice. The authors refer to an address delivered by Dr. H. Schaumann before the German Society of Tropical Medicine, in which he had advanced the conjecture that beri-beri is a disease of metabolism associated with a diet deficient in organically combined phosphorus. They conclude that the prevention of beri-beri may be achieved by substituting for ordinary white rice one in which the polishing process has been omitted or has been carried out to a minimal extent, or by adding to a white rice diet articles rich in those substances in which it is deficient; such an article, cheap and readily obtained, is the polishings from white rice. We feel pleasure in again noting this evidence of scientific activity in our Far Eastern colony, and congratulate the administration on the encouragement afforded to research by the foundation and maintenance of this institute.

[1] *The Etiology of Beri-beri.* By Henry Fraser, M.D.Aberd., Director, Institute for Medical Research, and A. T. Stanton, M.D.Tor., Bacteriologist, Institute for Medical Research.

THE MIDWIVES BILL, 1910.

A MEMORIAL signed by Miss Jane Wilson, president, Mrs. Scharlieb, M.D., vice president, and other influential members of the Midwives Institute, has been presented to the Lord President of the Council, praying him to make certain alterations in the Midwives Act Amendment Bill, 1910.[1] The memorialists express regret that the bill provided that payment to medical practitioners should be made by the Poor Law guardians in cases of emergency. They continue as follows: "In the future of the guardians being so uncertain it would surely be better to give the power at once to the authority which is responsible for the supervision of midwives, and on whom in future the power of payment will probably devolve. We earnestly suggest that the stigma inseparable from Poor Law help should not be permitted to attach to the parents at the time of birth. By engaging a midwife a poor woman is making a reasonable effort to keep her position of independence, and should the services of a medical practitioner become necessary, her case comes at once within the category of 'accident,' and should be so regarded; it is not in fact a case of destitution at all." The memorialists also ask that the Midwives Institute should have two representatives on the Midwives Board, one of whom at least should be a qualified and certified midwife. They object to the provision contained in Section II (1) requiring a certificated, but not locally registered, midwife who attends any woman in childbirth in any capacity other than that of midwife in the absence of a qualified medical practitioner to give notice to the supervising authority within forty-eight hours from the birth. The memorialists suggest that "the only effect of this clause will be to induce medical men to abstain altogether from their growing practice to employ a certified midwife as their monthly nurse, for the clause operates to compel the certified midwife under penalties to report the medical man for being absent (from whatever cause) at the minute of birth." They object also to Clause 15 giving an officer appointed by the local supervising authority for the purpose the power of entering any premises which he has reason to believe to be a lying-in home conducted for profit within the area of the authority, and in which he has reason to believe that a certified midwife is employed or practises, or that a woman not a certified midwife practises in contravention of the principal Act. The memorialists believe that the only effect of this clause will be to tempt the poor, and especially the unmarried woman, to go for her confinement to houses kept by unqualified women. They hold that this is to a great extent a question for a public health and not for a midwives Act. The memorial also contains suggestions for certain other alterations of minor importance.

ASYLUM WORKERS' ASSOCIATION.

AT the annual meeting of this association, held at 11, Chandos Street, W., on May 25th, Sir William Collins, M.D., M.P., President, was in the chair, and there was a large gathering of those engaged or interested in the nursing of the insane, including

[1] SUPPLEMENT, BRITISH MEDICAL JOURNAL, April 9th, 1910, p. 160.

the Rev. Canon Sheppard, D.D., C.V.O.; Dr. Hayes Newington, Treasurer of the Medico-Psychological Association; many medical superintendents, chaplains, and other officers of asylums throughout the United Kingdom, and numerous attendants and nurses. The proceedings commenced with the adoption of a loyal vote of condolence with the Royal Family in the grevious loss they and the whole country had sustained in the death of King Edward, the patron of all charitable works. It was moved from the chair and carried by the assembly upstanding. The annual report having been presented by the Honorary Secretary, Dr. G. E. Shuttleworth, its adoption was moved by the Chairman in a speech in which he commented on its principal topics. The crowning event of the year had been the passing of the Asylum Officers' Superannuation Act, securing for all workers in public asylums throughout the United Kingdom definite pensions after adequate periods of service. This assured prospect would tend to attract to, and retain in, the important work of ministering to the insane those best fitted for this beneficent but trying duty. Though the bill in its passage through the House of Lords did not escape a measure of mutilation, it would no doubt prove a most serviceable enactment. He was pleased to congratulate the association on a year of substantial progress. The membership had increased from 3,025 to 4,575 during the year under review, and the credit balance from £90 10s. to £152 7s. 11d. The Homes of Rest Fund had been liberally supported, and twenty ailing comrades had been benefited by grants therefrom. Still, much remained to be done in improving the status of asylum workers in the nursing world; and the stronger the association became the more could be effected in this direction. The motion to adopt the report was seconded by Dr. Hubert Bond, and carried. The re-election of Sir W. J. Collins as president was carried by acclamation, and after vice-presidents and the executive had been appointed, Dr. E. S. Pasmore presented to the president, in the name of the association, an illuminated address in grateful recognition of his successful efforts in the passing of the Asylum Officers' Superannuation Act (together with a basket of growing flowers for Lady Collins). Next came the presentation to Dr. Shuttleworth of a Remington Standard typewriter, with an oak drop-cabinet suitably inscribed, a cheque, and a miniature of himself by Gabrielli, as a testimonial of appreciation of his services in the promotion of the bill. This was the result of a general subscription amongst asylum workers throughout the country, and the presentation was made on their behalf jointly by Sir William Collins and by Dr. Hayes Newington, as representing the Medico-Psychological Association in the unavoidable absence of their President, Professor Bevan Lewis. In the course of the proceedings medals were presented for long and meritorious nursing service in asylums—gold to Attendant B. Thomas, Joint Counties Asylum, Carmarthen; Nurse A. Fraser (Matron), Robben Island, South Africa; and silver to Attendant E. W. Fraser, Isle of Man Asylum; Nurse E. Ashfield, Colney Hatch Asylum.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

THE annual meeting of this association will take place at 3 p.m. on Friday, July 1st, in the Council Chamber of the Town Hall of the city of Halifax. The President, Surgeon-General Evatt, C.B., will be in the chair, supported by the Worshipful the Mayor of Halifax (Alderman F. Whitley Thomson). After the meeting, the Mayor and Mayoress will hold a reception in the Mayor's parlour, at which afternoon tea will be provided. The following papers will be read, and will be followed by a discussion: (1) Poor Law Medical Reform, what it should aim at. By Major Greenwood, M.D., LL.B., Barrister-at-law. (2) The Medical Profession and Poor Law Reform. By John C. McVail, M.D., LL.D. At 7 p.m. the members and their guests will dine together at the White Swan Hotel, Halifax, the President being in the chair. Tickets, exclusive of wine, 6s. Ladies will be welcome at the dinner. Any medical practitioner desiring to be present at the dinner is requested to communicate with the Honorary Secretary, Dr. Major Greenwood, care of Dr. Drury, Landon House, Halifax.

DOCTORS IN COMMAND OF AN ARMY.

THERE have been many "fighting doctors" in our army, and medical officers have sometimes exchanged the scalpel for the sword. Dr. Jameson led a military expedition in South Africa. But hitherto, as far as we know, there has been no case in which the chief military command of an army has been entrusted to a man who began his career as a medical officer. Now it is announced that General Leonard Wood, whose work in Cuba has assured him a place in the history of sanitation, has been appointed Chief of the Staff of the United States army. General Wood took his doctor's degree at Harvard in 1884, and immediately entered the medical corps of the American army. In the war between Spain and the United States he became Colonel of Rough Riders, and in 1908 he was promoted by President Roosevelt to the rank of Major-General. It is interesting to note that the second in command of the United States army is also a soldier, so to say, by second intention, having originally entered the army as a medical officer. This is Major-General F. C. Ainsworth, who took his doctor's degree at New York University in 1874, and almost immediately entered the medical corps of the army as assistant surgeon. In 1892, we learn from the New York *Medical Record*, he was made Colonel and Chief of the Record and Pension Office of the War Department. From that time his advance has been rapid He was made a Brigadier-General in 1899, and in 1904 was made a Major-General and Military Secretary of the Army.

THE RESEARCH DEFENCE SOCIETY.

THE annual general meeting of the Research Defence Society will be held this day, Friday, June 3rd, at 5 o'clock, in the Library of the Royal College of Physicians, Pall Mall East, S.W., NOT in the house of the Royal Society of Medicine, as announced in the BRITISH MEDICAL JOURNAL of May 28th. The chair will be taken by the Right Hon. the Earl of Cromer, President of the Society. The other speakers will be Sir Richard Douglas Powell, Bart., K.C.V.O., Sir David Bruce, K.C.B., F.R.S., Mr. Anthony Hope Hawkins, and Mrs. Scharlieb, M.D.

HIS Excellency the Earl of Aberdeen, Lord Lieutenant of the County of Aberdeen, has, with the approval of His Majesty the King, appointed the Right Hon. Robert Farquharson of Finzean to be Vice-Lieutenant of the county, in room of the late Sir John F. Clark, Bart., of Tillypronie. Dr. Farquharson is a Justice of the Peace, and for some time had been a Deputy Lieutenant of the county.

THE annual election of members of the Council of the Royal College of Surgeons of England will be held on Thursday, July 7th, at 3 p.m. There will be

four vacancies, Mr. J. H. Morgan, C.V.O., and Mr. Lockwood retiring in rotation, while Mr. G. A. Wright has resigned. The fourth vacancy is due to the death of Mr. Clutton. Nomination papers, which may be obtained from the Secretary, must be sent in to him by June 10th. Our usual analysis of the present Council will appear shortly.

General Medical Council.

NOTES.

Medical Disciplinary Cases.—The greater part of the time of the Council during the session which came to an end on Saturday last was occupied in the discharge of its duties as a disciplinary authority under the Medical and Dentists Acts. To certain of the medical cases which were brought before the Council by the British Medical Association we refer elsewhere (p. 1366), but another case was heard in which a conviction for libel was the means of bringing the matter before the Council. The libel related to the character of a girl with whose family the respondent had been intimate, both as a friend and as medical attendant, and touched upon matters which might have come under his cognizance as a medical man. As he had pleaded guilty the question of the truth or untruth of the libel did not arise. His name was directed to be erased from the *Medical Register*. A practitioner was struck off the *Register* in consequence of a conviction for using an instrument with intent to procure abortion, for which a sentence of five years had been imposed and is now running. Another was struck off in consequence of repeated convictions for drunkenness; and yet another for the same cause, this last case having been adjourned from the last session. But no evidence of improved conduct in the interim was offered, and an additional conviction for a similar offence was recorded the very day after the previous hearing. In an adjourned case of convictions for drunkenness and violence the respondent was let off with a warning, evidence of improved conduct in the interim having been tendered and accepted.

Dental Disciplinary Cases.—In one case in which facts had been found proved but judgement upon their gravity postponed till this session, no further action was taken, the practitioner's assurances as to his conduct in the interim having been accepted as satisfactory. In another the facts were taken as proved, but judgement postponed; and in a third, a case of covering, the practitioner's name was removed from the *Register*. A new issue arose in a fourth case, in which it appeared that the practitioner, who had originally registered as in practice prior to 1878, was dead, but a successor had continued the practice at the same address under the same name, which was not his own. Several periodical inquiries by the Registrar had been answered from this address and signed with the name originally registered. It was admitted that the person who had signed these returns was not the person who had originally registered. The Council for the present confined itself to ordering the removal of the name from the *Register* on the ground that the person registered was dead, but probably more will be heard of the case.

The Subjects of the Final Examination.—Towards the solution of the question whether candidates should or should not be allowed to pass the subjects separately, or should be compelled to pass in all at one and the same time, the Examination Committee presented a memorandum in which, so far as was practicable, the rules of the various licensing bodies were summarized. It was decided to send this memorandum, in which no opinion was expressed, to all the licensing bodies for their comments, and in order that each may know what the others are doing—a thing not easily discoverable from their calendars. Little discussion took place on this preliminary communication, but Dr. Norman Moore expressed the opinion that to allow the subjects to be taken separately did not conduce to "cram," but, on the contrary, to a more thorough devotion to the subject in hand. Much might have been said, and doubtless will be said, when the matter is ripe for discussion, on the other side. A further recommendation, to be dealt with at some future time, was that ophthalmology, otology, and diseases of the throat should form obligatory subjects of instruction, and that every candidate should be examined thereon.

The Subjects of the First Examination.—A memorial against the relegation of physics, chemistry, and biology to a period antecedent to the curriculum at a medical school was presented to the Council, signed by a number of those engaged in teaching these subjects; but though the memorial was influentially signed some names were conspicuous by their absence, and no action was taken in the matter.

The Dental Education and Examination Committee.—The Dental Committee recommended that, in view of the facts that many new bodies were granting dental qualifications, a cycle of inspections of the examinations be commenced, and the Executive Committee was instructed to arrange for this being done. The question whether apprenticeship to a registered dental practitioner for instruction in mechanical dentistry should be counted for two years or for one only towards the four years of the curriculum had arisen owing to the practice of the Royal College of Surgeons of England being somewhat at variance with the Council's recommendation; but as the teaching of mechanical dentistry at the schools is rapidly supplanting the apprenticeship system it was not thought worth while to make any change in the Council's recommendation, which relates to an expiring custom.

Pharmacopoeia Committee.—The revision of the *Pharmacopoeia* is progressing, and it is proposed that the results of the work done up to the end of 1909 shall be published and submitted to professional criticism.

Finance.—The Finance Committee reported that there was a small deficit on the working of the year, but attributed this to the appearance in the accounts for the last time of certain expenditures which had been charged over a series of years. The outlook for the future is not wholly satisfactory, for registration fees for the last quinquennial period averaged £535 less per annum than for the preceding similar period, notwithstanding an increase from fees for registration of additional qualifications, restorations, etc. It was pointed out by the Senior Treasurer, Mr. Tomes, that this diminution in the numbers registering had occurred in spite of a rapid increase in the number of licensing bodies and of medical schools, and that, so far, there was no sign that this increase in local facilities was leading to any increase in the numbers preparing for or actually entering the profession. On the other hand, an increasing burden was placed upon the funds of the Council by the addition of new members representing these new qualifying bodies. The Senior Treasurer suggested that the President would try to arrange, as had already been done in the case of the University of Sheffield, that the bodies should themselves bear the cost of their representatives, at all events until such time as they had a material number of graduates.

The Council's Trustees.—Owing to the death of Mr. Wheelhouse, a former direct Representative, who had long acted as one of the Trustees of the Council's funds, there was a vacancy, which was filled by the appointment of Mr. Tomes, the Senior Treasurer.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

UNIVERSITY COLLEGE, CORK.

THE first degree ceremonial at University College, Cork, took place on May 26th in the Great Hall of University College, Cork. The floor and galleries of the hall were filled with students and their friends and notable laymen and ecclesiastics from the city and county of Cork. The dais was reserved for the members of the governing body and academic staff of the college. The President, who also acted as Pro-Vice-Chancellor, representing the National University of Ireland as well as Cork Members of Senate, with the professors, lecturers, and demonstrators formed into a procession, the colours of the academic robes worn lending a picturesque effect; headed by the new mace of the college it entered the Great Hall at 2 p.m.

The Pro-Vice-Chancellor (Dr. Windle) declared the congregation open, and in his address referred to the proceedings of the day as marking an epoch of very great importance in the history of University College, Cork. It was the first senate meeting of any university which had been held in Cork since the times of St. Finbar. Its purpose was to confer on the students successful at the late examinations the degrees which they had obtained. These examinations had been held by the professors of the college in conjunction with external examiners unconnected with any of the constituent colleges. These gentlemen officiated also in Dublin and in Galway, and thus a common standard was maintained between the three colleges. The Pro-Vice-Chancellor referred to the amount of autonomy the Cork College possessed, but said that he would never be satisfied till Cork had a university of its own. This depended entirely on the people of Munster, who must help in three ways—first, by sending their sons and daughters in large numbers to the college where already such good work was being done, particularly in the medical and engineering departments. This year the first place in the Indian Medical Service was taken by a student who had received his entire education in the Queen's College, Cork, now University College. Secondly, by making money grants to the college, as had been done by the citizens of Belfast, where as much as £25,000 has been given by a single citizen. Thirdly, the people of Cork and of Munster must be proud of their college. If it did not come up to their ideals, that was their own fault, for a country or a province got the education it deserved. Within the last few years many improvements had been made, notably the foundation of the Students' Club, the Biological, Chemical, Pathological, and Histological Laboratories, new class rooms, and a ladies' club.

Having congratulated the students receiving degrees, and particularly Dr. Kearney on being the first and only receipient of a gold medal from the National University, the Dean of the Faculty of Medicine presented the following candidates for the degrees of M.B., B.Ch., B.A.O.: R W. G. Hingston (first-class honours), M. Twoling (second-class honours), P. J. Cullinane, A. V. Harrison, J. Keynes, B.A., M.D., J. J. Kearney (first class honours). The degrees were conferred by the Pro Vice Chancellor.

The procession then left the hall in the reverse order to entering, the new graduates following the junior members of the staff, and the proceedings ended.

COUNTY NATIONAL MEDICAL SERVICE.

The Galway County Council has had under consideration the proposed substitution of either a county or a national medical service for the present Poor Law medical service, and has passed a resolution in favour of the county scheme, on the grounds that a national service would tend to remove all control of the medical officers from the representatives of the ratepayers. The council is also of opinion that the claim of medical officers to promotion and pensions would best be met by the adoption of a county service under the direct control of the county councils. As it is likely that other county councils may follow the lead given by Galway, it is of extreme importance that the dispensary doctors in Ireland should as soon as possible come to a decision in favour of one or other of the schemes, in order that due consideration may be given to their views when legislation is initiated.

THE CHILDREN'S ACT IN BELFAST.

At the first meeting of the Belfast Children's Act Committee, held on May 26th, Councillor Dr. Trimble, the chairman, gave an outline of the responsibilities of the committee. There were, he said, some 1,800 boys and girls from Belfast undergoing various terms of detention in industrial and reformatory schools scattered from Donegal to Cork. As the responsible authority the Corporation contributed to their support upwards of £11,000 annually; yet it had no official knowledge of the whereabouts of these juvenile offenders. It was therefore necessary as a preliminary measure, to establish and maintain a register and to tabulate the information obtained, showing particulars as to parentage, environment and history, before and after conviction, for future statistical purposes. The root causes of commitability must be ascertained, whether (*a*) parental, based on poverty, sickness, and criminality; or (*b*) individual, due to environment, want of training, or innate viciousness. The importance of this system of grouping consisted in its suggestiveness for remedial measures. Dr. Trimble emphasized the inadequacy of probation until the Treasury made such allowance as would enable suitable men and women to undertake the responsible and onerous duties of supervision of those offenders allowed home. At present no officers were available for this work, nor had any list of "fit persons" to whose care the child could be committed ever been compiled for the use of the justices of the Children's Court. The institution of day industrial schools would meet the case when the child had become derelict through absence of the parents at work. He recommended, however, that the committee should undertake exhaustive inquiries to ascertain what might be done and how best to do it before launching into large undertakings.

MEASLES IN BELFAST.

At the meeting of the Public Health Committee on May 27th, Councillor Dr. Robert Thomson in the chair, the medical officer of health drew attention to the alarming increase in the number of deaths from measles; they had risen to 40 for the previous week. He attributed this to carelessness on the part of many parents, and proposed the issue of a paper enumerating the practical precautions which should be taken.

DUBLIN WATER SUPPLY.

The Cleansing Committee of the Dublin Corporation has had under consideration a report from the borough surveyor calling attention to the fact that, in spite of the heavy rainfall, the water level in the reservoirs at Roundwood is 15 in. below the level recorded at this time last year, and asking the committee to restrict the public use of water as much as possible. While there is as yet no immediate cause for alarm, it has been thought wise to make arrangements for the use of canal water for street watering, and the citizens are desired to co-operate with the corporation in seeing that there is no undue wastage of water.

VETERINARY DISPENSARIES.

In a recent speech in Dublin, Mr. T. W. Russell, Vice-President of the Agricultural Department, stated that a plan for the establishment of veterinary dispensaries in Ireland was in process of development, and that he hoped the system would shortly be in operation. The whole of the congested district has been mapped out into dispensary areas, scales of fees have been arranged, and already negotiations have been entered into with veterinary surgeons with the object of inducing them to undertake the work. The benefits of the scheme will be confined to small holders, to whom it should prove of very great value.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

PROPOSED ZOOLOGICAL GARDEN FOR EDINBURGH.

THE Zoological Society of Scotland was constituted on March 18th, 1909, to advance the study of zoology, and to foster and develop among the people an interest in, and knowledge of, animal life, and to establish and carry on living zoological collections or zoological gardens in Scotland, has just issued its first annual report. The growth of membership, if not rapid, has been steady. The number of members on December 31st, 1909, was 65, no invitation to the public to support the society having been made at that date. At that date it was decided to reduce the annual subscription of members from £1 1s. to 10s. 6d., and in January, 1910, the issue was begun of a circular inviting membership and appealing for donations; in response, many additions were made to the roll, the number of members at the time of issuing this report being 105.

There is an unhappy tradition—in combating it the council has found one of its great difficulties—that the climate of Edinburgh makes impossible the well-being of exotics, and especially of tropical animals. In point of fact the climate is not more trying than that which affects many of the largest zoological gardens. It is not so cold in winter as Berlin, or Hamburg, or New York, nor so hot in summer; it is not more foggy than London, nor more damp than Amsterdam.

There is practical experience to prove that the climate of Edinburgh need not be an obstacle. The directors of the old Edinburgh Garden, in their first report, congratulated themselves and their supporters on "the fact, supported from the experience of two years, that the most delicate of the tropical animals can be maintained in good health during the severest winter in this country as successfully as in Paris or London." Moreover, besides the public garden collection, private collections of wild animals, including tropical and subtropical species, have been maintained in and near Edinburgh. The old garden was good in its day, but fifty years have passed, and the most modern method of accommodating wild animals for exhibitional purposes makes the old system of cage and den, however excellent of their kind, seem crude and ineffective. The garden that the society wishes to establish will be designed after the fashion of the now famous gardens laid out by Herr Hagenbeck at Stellingen, near Hamburg. The idea of that garden is to exhibit "wild animals at home." The animals, with a few necessary exceptions, are not confined indoors, but have the freedom of large open air enclosures, artistically arranged. Fosse, cliff, and hidden railing take the place of walls and bars, and there is no possibility of escape of any dangerous animal. Photographic views of the Hagenbeck Garden are given. On an ornamental lake, and in the park surrounding it, many aquatic and other birds live at liberty, finding shelter in caves in the low rock in the centre. Immediately beyond the rock is a roadway for visitors, while beyond that again is a large park, in which an apparently perfectly happy family of grazing animals—camels, zebras, wild cattle, etc., lives. The entrance to their shelter caves are in the masses of rock at each side. In the central distance a large cluster of rockwork towers up, serving on top as a home for mountain sheep and goats, while the long grotto beneath the overhanging cliff is the "lions' den." Fenced footpaths wind upwards among the rocks, enabling the visitors to ascend. The lions' grotto is of ample size, the spectators looking into it from behind a screen of vegetation, and over a deep pit which the animals cannot cross, see its inhabitants in a state all but natural. The "arctic mountains" is, perhaps, the most striking scene in the garden.

There are many sites near Edinburgh admirably suited for such a garden. The value of a zoological collection lies not in the quantity of its specimens, but in the quality of their arrangement, and some famous collections are of a size that Scotland could easily maintain.

The garden of the Royal Zoological Society of Ireland at Dublin is very successful, and a garden at Edinburgh has every prospect of a like success.

The council now appeals to the public to support it in its efforts to found a national garden at the capital of Scotland.

PROFESSOR SCHÄFER AT BERNE.

On May 23rd, on the invitation of the Rector, Professor Schäfer gave a lecture to the University of Berne on the functions of the pituitary body. The lecture, which was illustrated by lantern slides, formed one of a series designed to commemorate the seventy-fifth anniversary of the refounding of the university, and was listened to attentively by a large appreciative audience. At its conclusion the Rector, in felicitous terms, announced that he had been authorized by the university to confer the honorary degree of M.D. upon Professor Schäfer, who was accordingly thereupon duly presented with the diploma.

STUDENTS' HOSTEL, WESTERN INFIRMARY, GLASGOW.

A long-felt want in the hospital life of Glasgow promises to be met by the proposed establishment of a students' hostel or residence in connexion with the Western Infirmary. The hostel, which is to be situated close to the infirmary, is intended for students in their third, fourth, or fifth years. The hostel is to be in direct telephonic communication with the hospital, so that students in residence can be informed of emergency operations, and cases of accident or poisoning, which may occur in the afternoon or night. Under the present system such cases are rarely seen by the students, as there is no means of getting in touch with them. As the charge at the hostel is to be only about a pound a week for board and residence, it is likely to prove very popular. It will certainly greatly increase the value of the Western Infirmary to the senior students, who by its means will be able to see the treatment of emergency cases which require immediate attention. It is proposed to open the hostel in October.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER AND DISTRICT.

THE MEDICAL GUILD.

IT has now been finally settled that the Medical Guild shall be dissolved. The sole and satisfactory reason for the dissolution is that the Divisions of the British Medical Association are now sufficiently active and united to do all that the guild has done in the past, and have the added advantage of being organically connected with a great Association whose influence extends both locally and generally in matters that affect the interest of the medical profession. The first of several preliminary meetings of the profession, which resulted in the formation of the guild, was held on July 5th, 1894, and the first annual meeting on January 24th, 1895. The guild has thus been in existence nearly sixteen years. One of the principal reasons for its formation was to oppose the methods used by the Manchester and Salford Provident Dispensary Association, and though it has not been in all respects successful, it has been able to bring about some reforms which, at any rate, have made the provident dispensaries somewhat less objectionable than they were. In other respects the guild was for some years the only society of medical men in Manchester which practically voiced the opinions of the profession on medico-political matters, and its influence has undoubtedly been helpful to general practitioners in ways too numerous to mention. In 1898 it was resolved to issue a magazine, to be called the *Medical Guild Quarterly*, which served a useful purpose in informing the pro-

fession of the work of the guild. Several years ago the name was changed to the *Manchester Medical Review*, but it was not altogether successful in obtaining the support of the other medical societies of the district, and last year it was decided to give it up. During the last few years a rapidly increasing proportion of those belonging to it have become members of the British Medical Association, and as the objects of the two are practically the same, it frequently happened that the same subjects had to appear on the agenda of each, and almost the same men had to deal with the same matters twice over. Even when the decisions of the two societies were the same, as they almost invariably were, there was a serious waste of time in the duplication of meetings, and there was just a possibility that any apparent discrepancy in the decisions might be used to damage the influence of both the Divisions and the guild. In addition to this the membership of the guild had been decreasing within the last few years. Quite naturally members have felt some regret at its dissolution, as it had done so much good work in the past, but they recognized the inevitable, and thought it best to dissolve while the financial position was still satisfactory. There is a substantial balance in hand, and the final meeting of members will have the pleasant duty of disposing of something over £30, after paying all liabilities. It is much to be hoped that all members of the guild who are not members of the British Medical Association will recognize that union of forces under one association will offer far better chances of success in negotiations with lay bodies, and that any regrets at the dissolution of the guild, especially felt by those who have so consistently worked in it ever since it started for the good of their fellow practitioners, will give way to a determination to avail themselves of the still wider field of usefulness offered in the British Medical Association.

LIVERPOOL.

The Liverpool School of Tropical Medicine.

Dr. Wolferstan Thomas, Assistant Lecturer in the Liverpool School of Tropical Medicine, has been appointed to the directorship of the new laboratories supported by the foreign business firms at Manaos, in the State of Amazonas. Dr. Thomas has also been commissioned to proceed to Porto Velho on the Madeira River to investigate the diseases endemic to that district, which tend to retard the commercial progress of the country. Dr. Thomas expects to meet Dr. Oswaldo Cruz, the distinguished Director of Public Health of the Brazilian Republic. In the new laboratories Dr. Thomas will direct researches in tropical medicine bearing upon the preservation of health and disease. He is taking with him a complete scientific outfit, and it is confidently expected that this new offshoot of the Liverpool School of Tropical Medicine will be the means of producing much benefit in the cause of humanity and commercial progress. This is the second institute that has chosen a student of the Liverpool School of Tropical Medicine as its director.

BIRMINGHAM.

The Birmingham Medical Benevolent Society.

At the eighty-eighth annual meeting, held at the Midland Medical Institute on May 26th, the President, Sir Thomas Chavasse, moved a resolution expressing profound sorrow at the death of King Edward VII and deep sympathy with His Majesty King George V and the members of the Royal Family in their great national loss. The report of the directors of the society stated that the good work of granting relief to those in need of the society's assistance had been carried on as usual during the past year in a quiet, unostentatious manner. The invested funds now amounted to £16,090, and there was a balance of £17 at the bank, making a total of £16,107. The sum of £150 was invested during the year. Twenty-five annuitants received help from the society during the year, the annual value of the grants ranging from £36 to £18. The sum expended on grants and donations in 1909 was £734. The income during the year amounted to £833, and the expenditure to £786, the surplus income being £47. The total number of benefit members at the end of the year was 391, but there were only 242 from whom the annual subscription was due. The directors drew attention to the very large number of practitioners in the district who had not yet availed themselves of membership of the society, and they urged all those interested in the welfare of their professional friends who were not members to make a special effort to induce them to join.

Mr. F. Marsh, one of the treasurers, pointed out that the society's average income was £770. The management cost about £50, so that there was a sum of about £720 available for grants. There was no question that the funds were not sufficient, and for some years the income legitimately at disposal for grants had been exceeded, and donations and other sources of income had to some extent been drawn upon. Among the donations recently received was one of £50 from Sir Thomas Chavasse.

Dr. Simon was appointed president for the ensuing year, Mr. W. F. Haslam president-elect, and Dr. A. V. Bernays and Mr. Jordan Lloyd vice-presidents. The following were re-elected: Mr. F. Marsh and Mr. W. F. Haslam, treasurers; Mr. F. Crowder, honorary solicitor; Dr. T. Stacey Wilson, honorary auditor, and Dr. J. E. H. Sawyer, honorary secretary.

Special Correspondence.

PARIS.

Congresses, Scientific and Professional.—Foreign Practitioners in France.

In France March is the month of showers, as is April in England, but in revenge April brings us congresses. These scientific assemblies seem to gravitate towards the equinoxes; but while the spring congresses are more of the nature of family parties, more local or national, the autumn congresses are more cosmopolitan and bring together a larger number of persons of international distinction, and attract more strongly the attention of Governments, which courteously take an official part in the inaugural proceedings and cause a hail of honours, medals, and ribbons to mingle with the rain of papers.

The spring congresses are, so to say, trainers' races, where the champions of the future show their paces and make their trial gallops. During this last April we had some sufficiently remarkable examples, both scientific and medico-political. The Congress of Physiotherapy, with its dependent exhibition, was a very great success, and the general press gave reports of it as full and careful as though it had been a fine arts exhibition or M. Lépine's annual show of toys. Physiotherapy is regarded with ever-increasing favour by the educated and well-to-do public, though the common herd is still ready enough to deliver over its stomach to the drugs of the quackmongers, and even forces the hand of the doctor, compelling him to write prescriptions for pills and potions which as a rule he tries to make as soothing as possible. With a class a little superior physiotherapy enjoys a very different reputation. It is being recognized that the task of repairing every kind of organic disorder has too long been imposed upon the alimentary canal, and the more enlightened among contemporary laymen decline any longer to drench their liver with the syrups of lactucarium (sweet-scented lettuce) or tolu, which tradition still expects them to ingurgitate. The imagination of the invalid is now stimulated by electrotherapy, mechanotherapy, kinesitherapy, phototherapy, and radiotherapy. What prosperous bourgeois, his mind full of the conquest of modern science, dazzled by the achievements of wireless telegraphy, or the rotatory motor of the latest king of the air, will any longer consent to allow his lips to be defiled by the nauseous saltness of potassium iodide, when there exist whirling machines, giving forth crackling high-frequency currents, which will instantly relax the spasm of commencing sclerosis? His view is,

indeed, most judicious, for is not man something more than a belly, and must Master Stomach always be the first to suffer on account of every failure of some other part of the organism? As a mere matter of equity, rational medicine must end in physiotherapy.

We have had also the congress of practitioners, but it does not seem to have achieved any very remarkable practical results. Most of the great questions on the agenda paper might each have afforded material for a discussion so prolonged that it would have occupied the whole of the time given to them all. It was necessary to limit the time assigned to each orator, and, as at the examination for externs, to allow to each a space of no more than five minutes within which to develop his eloquence. Hence, it came about that in the case of more than half the subjects discussed no definite conclusions were reached. For example, the question as to limiting the number of medical students, and, in the long run, of doctors, by competitive entrance examinations at the school of medicine, was eventually referred to the Vigilance Committee, which is to report upon it next year. Although everybody recognizes that there is a plethora of doctors, when it comes to finding a remedy the self-opinionatedness, which seems rather characteristic of our profession, leads every one of us to wish to propose a remedy of which (we use the expression of one of our vaudeville writers) he is the only father, and the merits of which he is on this account disposed to exaggerate. It is difficult to arrive at any common understanding between men of equal intelligence and equal authority. It must often happen that to recognize the superior strength of an argument seems to place one in a position of intolerable subordination, and the medical world in this respect has particularly acute susceptibilities.

A question which was not discussed at the congress of practitioners, but one which cannot fail sooner or later to arise, is that of the position of foreign practitioners established in France. The very large hospitality which the faculties of medicine offer to foreign students, from whom they demand before registration only evidence of "equivalence of diploma," which dispenses them from our more severe examinations, and the advantage which they have over French students owing to the fact that their studies are not interrupted by two years of military service, are circumstances which have already given rise to lively protests. It is very possible that these protests would not have been made were it not that many of the students when they have obtained the diploma of doctor establish themselves in France, increasing the overcrowding of the profession, while at the same time they introduce into their practice methods contrary to the standard of French medical ethics. It is especially from the Balkan countries that these too eager *confrères* come. No doubt they have been brought up from their cradles in the belief that France was always the happy hunting ground for which Goths and Dacians should abandon the banks of the Danube, and we see them seizing upon *clientèles* in districts in which there are no competitors, or setting up in opposition to men who have been long in practice; prodigal of their visits, and charging high fees, they hold the people at ransom, and then after two or three years go off to repeat, in another field, the same manœuvres and to carry on the same policy of pillage. No doubt there are honourable exceptions, but they grow fewer and fewer, and in spite of all the courtesy which we pride ourselves on showing to people who proclaim at every street corner that France is their second country, we shall soon be obliged to defend ourselves against this too lively demonstration of affection and against endearments which are strangling us. Nevertheless, it must be admitted that such proceedings have at least one happy result, in that these persons charge high fees. When a region which has been thus severely treated is abandoned by one of them, his successor finds that the reasonable tariff approved by our professional organizations is easily accepted, and the public are left with a recollection of a harsh experience and well-founded distrust with regard to all that concerns the eastern question.

No doubt this is only a passing evil, but French medicine, which has always prided itself in looking upon the interests of the sick as its own, ought to take the matter into consideration.

Correspondence.

HERMAPHRODITISM.

SIR,—In the JOURNAL of May 28th, p. 1315, under the title of Hunter's Free-Martin, you give an account of the examination of specimens by Dr. Berry Hart, preserved in the Hunterian Museum. This was of great interest to me as showing that they were imperfect males. This has invariably been my experience both in the human subject and in the lower animals. I mentioned this a short time ago in a contemporary journal in connexion with a very striking case of this malformation. In all the cases which I have seen and others carefully reported it has invariably been the same, and as regard animals you now give the cases of oxen and in sheep it has always been observed that these epicene creatures were invariably rams and not ewes as the shepherd thought. That is, the discovery was made when they fell into the hands of the butcher.

I cannot see the possibility of the same germ developing into two sexes; it must take the one form or the other, that is, male or female. That the so-called hermaphrodite should always be an imperfect male and not female is easy to understand when we see that the descent of the testes into the scrotum is necessary for its full development, so when arrested in its passage and not properly developed (this organ governing the whole masculine character), the body puts on the feminine form. The opposite may be theoretically true, but not likely to occur, as the ova and ovaries in the female are free in the lower part of the abdominal cavity.

The word "hermaphrodite" is a misnomer—no such creature could ever exist. It comes from an old Greek mythological story of Hermes and Aphrodite or Mercury and Venus coming together, and ever since the word has been perpetuated. There never was such a double creature and never could be, according to my own experience and reasoning.—I am, etc.,

Hampstead, May 28th. SAMUEL WILKS.

STRONG WINDS AND PHTHISIS.

SIR,—In your leading article of May 28th, "Rainbearing Winds and Phthisis," commenting on Dr. W. Gordon's book, *The Influence of Strong, Prevalent, Rain-bearing Winds on the Prevalence of Phthisis*, I perfectly agree with you that Dr. Gordon's book is a most valuable contribution to the literature on phthisis. Strong south-west winds are injurious to some otherwise healthy persons, causing in my own experience sickness, diarrhoea, headache, neuralgia, urticaria, etc.—a fact which was known already to Shakespeare, who makes Caliban curse:

> . . . A south-west wind blow on ye and blister you all o'er!
> *Tempest*, Act I, Sc. 2.

I, however, still adhere to the view which I expressed at the meeting of the Royal Medical and Chirurgical Society in October, 1900, when Dr. Gordon's paper on this subject was read, namely, that the prevalence not only of strong west and south-west winds, but of all high winds, as well those from north and east as those from south and west, exercises an injurious influence on those predisposed to or suffering from phthisis; and, as far as my experience goes, the dry north and east winds are quite as injurious as the rain-bearing winds.

I may venture another remark. Dr. Gordon on p. 1 of his book refers to the opinion generally held, which he regards as at variance with the results of his important inquiries—namely, the opinion that "the house should be protected from northerly and easterly winds, and well open to the south and west." I still hold to this advice, and think that it is in no way opposed to Dr. Gordon's results. I remember having used identical words when discussing the selection of the site of houses for persons suffering or recovering from pulmonary tuberculosis. These words referred to the house, not to the district, and the meaning of "well open to south and west" was not to the south and west *winds*, but well exposed to the *sun* and its purifying influence on the air. It must be confessed that it is not always easy to find free exposure to the sun without exposure to the south and south-west winds; but it is often possible to meet with sites on slopes of hills, sheltered from north and east and protected entirely

or to a great degree from south and west winds by mountain ranges acting as barriers against them without obstructing the rays of the sun.

Such ought to be the sites for sanatoriums for the cure of tuberculosis and also of other chronic disease—as, for instance, anaemia.—I am, etc.,

London, W., May 29th. HERMANN WEBER.

CANCER OF THE RECTUM.

SIR,—I am very glad Mr. Harrison Cripps has called attention to the difference in the teaching of clinical experience, and some recent pathological investigation, with regard to the treatment of cancer of the rectum. My practice has also been to cut 1 in. wide of the growth, both above and below it, and in many cases patients have lived for several years without any local recurrence, and as Mr. Cripps points out, when it does recur, it is often in the surrounding tissue and not in the rectal wall itself. Of course, it may happen that in some cases there is a widespread infection along the lymph path in the bowel wall, and, therefore, the greatest length of bowel we can resect without adding to the risk of the operation for causing any trouble after recovery the better, but that such widespread infection is not present in many cases is shown by the clinical evidence, and so, I think, we are not called on to do a very extensive operation for the purpose of any bowel resection, if it involves a distinctly higher mortality.

I do not, therefore, think that it is necessary to perform the abdominal method of excision, rather than the perineal or sacral, to get a great length of the bowel away. Neither do I think that by adopting the abdominal method of operating we should reduce the mortality of the operation for removal of rectal cancer. The mortality of the abdominal operation for cancer of the rectum has been great. I must say I do not see why this should be so, and I believe it will not be so in the future. Of course, if the cancer is so extensive that for that reason the abdominal operation is performed, then we would expect a higher mortality, because the probability would be that an unusually extensive operation would be required, but I see no reason why the approach to the growth from its abdominal rather than from its lower aspect (for by both routes the operation is an intraperitoneal one in cases of high cancer) should be attended by a higher mortality, provided that the actual resection of the growth is not performed within the peritoneal cavity line, only after that has been carefully shut off with suturing or packing, or both. The mortality of Kraske's operation in the present time is not very great in the hands of many surgeons. When Wertheim began to remove cancer of the cervix by his abdominal method, the mortality of the operation was very great; but it has now become much reduced, even though cancers more advanced are removable by this method than by vaginal hysterectomy. Until surgeons become accustomed to a new method of operating the mortality is often higher than it becomes later on.

I have no time just now to go through my records since 1908, and find out exactly my own mortality with Kraske's operation, but when I studied my records up to 1908 (BRITISH MEDICAL JOURNAL, 1908, vol, i, p. 1038), I found I had had no death in my last 12 cases. But I do find that although abdominal operation is not indicated either to lessen mortality, or to enable the operator to resect any great length of the bowel, it is for two other reasons. Any high excision of the rectum must involve an appreciable risk to life, and it seems to me that we often run that risk when it is possible we are leaving secondary growth behind. This may of course be so in operations for cancer in other positions. For instance, we may remove a cancerous breast and clear out the axilla, and even remove the supraclavicular glands, and yet there may be secondary growth we cannot detect in some inaccessible part, such as the mediastinal glands. But in cancer of the rectum it is so likely that if there are secondary growths, which we cannot detect in the neighbourhood of the rectum at the operation, they will be either in the high sacral or lumbar glands or on the liver, and could be detected by abdominal incision. I think, therefore, we should explore the abdomen in all cases before excision of high rectal cancer, and then it seems to me that it must be easier to detach the pelvic colon, so as to bring it well down, by dividing it from the abdominal rather than the sacral aspect, and, moreover, we are less likely to interfere with the vessels supplying the cut end, for we can divide the mesocolon close to its origin, that is, further from the colon, and this is of great importance, for sloughing of the cut end is so apt to lead to failure of union in those cases in which we are able to join them. I should not feel inclined to undertake the resection of the bowel within the peritoneal cavity; I should thoroughly free it, and pack it down into the lowest part of the pelvis, and endeavour to close the peritoneum with sutures around the highest part of the separated colon, and thus bring it out through a perineal or sacral opening and resect it, and if possible unite the ends. In one case in which I explored the abdomen before undertaking a Kraske's operation, I found a malignant gland high up in the lumbar group, and instead of doing a Kraske's operation, I had to resect so great a length of the mesocolon to get all the glands away that there was no chance of bringing down the upper cut end of the bowel to the sacral region, and I had to bring the upper end out in the inguinal region. Still, I was able to remove all the disease, which I should not have done by Kraske's operation. Indeed, I should not even have discovered it. Then there is another discovery we may make by abdominal exploration. I know from experience that a rectal cancer may feel absolutely fixed on rectal examination, even when the patient stands up and strains down, and yet when you grasp the growth from above, that is, when you have opened the abdomen, perhaps simply for the purpose of doing a colotomy, you find it is not fixed to the lining wall, and can be resected, and I did this in one such case. But I think it is a question whether, if a growth is so fixed in the surrounding cellular tissue that it feels absolutely fixed per rectum, it is wise to remove it even if it can be done. In my own case the difficulty was very great, and the patient did not recover, but it was quite possible to remove all the disease without injury to the bladder or ureters, and in another case the patient might recover. There was severe shock, but he rallied from this, and death occurred on the third day with hyperpyrexia. Moreover, quite apart from the possibility of removing the growth when per rectum it appears an irremovable one, I intend to open the abdomen and separate off the pelvic colon from its abdominal aspect in all cases of high cancer of the rectum in the future. Even if we are not going to operate by the abdominal route, I feel convinced that we should always have the skin of the abdomen prepared. It may happen that in the course of a Kraske's operation we may find an outlying nodule of cancer in the pelvis where we cannot possibly see it, and yet we can cut it out with scissors curved on the flat. We have to take the chance of wounding some fair-sized artery or possibly a nerve, but it is of the utmost importance to get away all the disease. Therefore, we should be prepared to open the abdomen and ligate the internal iliac artery through the peritoneum before cutting out such a nodule.—I am, etc.,

Bristol, May 28th. CHARLES A. MORTON.

SIR,—A reader of Mr. Harrison Cripps's letter, unless he has also read my second Hunterian lecture, published in the JOURNAL of April 16th, would imagine that I had claimed to produce evidence which settled the whole question of the operative treatment of rectal carcinoma. So far from this being the case I expressly stated that I had not been able to penetrate beyond the fringe of the problem, and that my conclusions rested merely on the very careful examination of one case. I would, however, remark in passing that a single case exhaustively examined is worth a hundred dealt with by what I have called "cheese tasting" methods. This, I think, my results testify. What were the objects of my references to rectal carcinoma? They were mainly two. First, to demonstrate a new method of mucicarmine staining for cancer cells which will allow the course of dissemination to be better traced, and will enable the pathologist to tell the surgeon what parts must be removed if he wishes to be reasonably certain of getting beyond the disease. To show the potentialities of this method and the beauty of the results attainable was the object of my coloured plate. My second object was to raise—not to settle—the question of the proper operative treatment of rectal carcinoma, and to indicate the nature of the guidance and criticism which surgery might in the near future expect from pathology.

Mr. Harrison Cripps's letter may be divided into two parts, one embracing his criticism of my pathological observations, the other his criticism of what he believes to be my surgical practice. Since my lecture contained no detailed confession of faith in regard to the treatment of rectal cancer, it will be necessary to make clear the views I hold, and my reasons for holding them.

Mr. Cripps suggests that I have been misled in my observations by a personal bias in favour of the permeation theory of dissemination, and that I have mistaken normal structures for cancer cells. This is a question which no amount of discussion can settle. It is a question of fact which I shall submit to any competent jury with confidence. I propose, therefore, to take an early opportunity of bringing my slides before the Pathological Section of the Royal Society of Medicine. Meantime, if Mr. Cripps will show me a section of a non-cancerous rectum presenting the appearances which I have figured, I shall be ready to confess my surprise and my error.

Leaving this question to the future, I will now ask, with all the respect due to my critic's distinguished record, what are the reasons which make him recoil from giving my pathological observations a provisional acceptance? In the first paragraph of his letter he has given what appears to be the chief one. "If," says Mr. Cripps, "the facts as to the spread and infection by the lymphatics which he describes and illustrates are generally true, it would at once make any idea of curing rectal cancer by operation hopeless." In this *reductio ad absurdum* Mr. Cripps assumes that the extensive mucous permeation which I have proved to be an unpleasant possibility is present in every case, an assumption not justified by present knowledge nor by any words of mine. Since, however, there is no means of telling in a particular case whether mucous permeation has occurred, the removal of a considerable length of bowel is a right procedure on pathological grounds. Whether it is feasible and advisable is a separate surgical question.

Throughout his letter Mr. Cripps assumes that an operation for cancer which does not remove every particle of growth present in the body is necessarily a useless one. Here I must entirely part company with him. I believe that the incomplete extirpation of a cancer is sometimes followed by permanent freedom from recurrence, owing to the activity of the natural defensive processes, or to the exhaustion of the proliferative power of the cancer cells themselves.

At this point I imagine Mr. Cripps might intervene and tell me that in admitting the occasional cure of cancer by incomplete operations I have confessed the superiority of his methods and have abandoned the whole case for such extensive operations as the abdomino-perineal method for rectal cancer. But experience in other forms of cancer has shown that the more thorough the operation—the more nearly it approaches the ideal of complete removal—the greater the percentage of permanent recoveries. The ideal of absolutely complete removal in every case may be unattainable, but progress depends upon its continued pursuit. In cancer of the breast and of the uterus the more radical operations have abundantly justified themselves by increased percentages of freedom from recurrence. I believe the combined operation for rectal cancer is the operation most in accord with pathological knowledge, not mainly because it allows the removal of a longer piece of bowel, but because it permits a proper removal, with visual aid, of the pelvic fat and glands, and if necessary of part of the mesosigmoid.

But there are three ideals to be worked for in the treatment of rectal cancer, and they are to some extent conflicting. They are (1) absolutely complete removal of the growth, (2) complete restoration of the functions of the bowel, and (3) a minimal operation mortality. Let us see how far the second and third of these ideals are fulfilled, in the first place by the operation from below, which Mr. Cripps advocates, and in the second by the abdomino-perineal operation with establishment of a permanent artificial anus. For reasons which will appear each sex must be considered separately.

In the male sex I agree with Mr. Cripps in advocating the operation from below. The deep and narrow pelvis of men, and their liability to profound shock from pelvic interference, make the combined operation a prolonged and dangerous one. Kraske's and Rotter's statistics show that in the best hands it has a mortality of about 40 per cent. Under these circumstances, and in spite of its many disadvantages, the less dangerous operation from below is at present the method of choice except in young, spare, and vigorous subjects who are willing to take increased immediate risk for the sake of increased security against recurrence. Coming now to the female sex, Mr. Cripps is entirely mistaken in his belief that the combined operation is so "severe and risky" that no practitioner would advise such an operation for his patient. In point of fact, if it is terminated by the establishment of an artificial anus, and not complicated by the serious risks of an end to end union following resection, the combined operation in women is a very safe one. Statistics show that its mortality does not exceed that of the operation from below. Thus Schloffer lost but one of fifteen female patients on whom he operated, and Goullioud's 11 cases all recovered. During the past eighteen months I have operated on three women by this method without a death. In women, then, the ideal of complete extirpation may be pursued without increasing the death roll. And Goullioud records that 50 per cent. of his cases operated upon three years and upwards remain free from recurrence. I ask Mr. Cripps to quote the corresponding figure in his own cases of operation from below. It is true that women operated on by the variety of the combined method which I advocate have permanent colostomy openings. That discomfort is the price of their increased freedom from recurrence, in other words, of the lives of some among them.

There is one other point. If the worst happens and recurrence takes place, the woman with a permanent colostomy is freed from the risk of intestinal obstruction and from the necessity of facing another operation for its relief.

If an operation is done from below with restoration of the continuity of the bowel the result in a few cases is doubtless ideal, but in obtaining the "fair amount of permanent success" of which Mr. Cripps speaks, are not the vital interests of a number of other patients sacrificed to avoidable recurrence of the disease? That seems to me the main question.—I am, etc.,

London, W., May 31st. W. SAMPSON HANDLEY.

SICKNESS AND INVALIDITY INSURANCE.

The Model Rules.

SIR,—It is with great pleasure I see the wide and sustained interest now aroused by the State sickness and invalidity scheme, and it will be difficult to add to what has already been said by your able correspondents.

I have had a large and varied experience of contract practice, extending over a quarter of a century. In 1895 I supported the Cork profession in the successful stand they made against oppression. In 1902 Drs. Larking, Vernon, and myself investigated and reported on the club system in the South-Eastern Branch, which report was incorporated in the voluminous report of the Association in 1905 ably organized by Mr. Whitaker, which contained numerous depressing and monotonous replies from nearly 5,000 inquiries.

The Model Rules for contract practice now issued for the consideration of the Divisions by the Council are in accordance with the instruction of the last Representative Meeting. Since 1905 the opinion of the profession has evidently advanced towards a contributory system, and the whole aspect of the question has been altered by the prospect of State insurance of sickness and invalidity; thus making it compulsory instead of voluntary, and therefore all will have to be attended.

During our inquiry of 1902 to 1905 I came to the conclusion that the contributory system was the only satisfactory solution to the problem, for these reasons: That, as the payment corresponds to the work done and tends to efficiency, the fact that a portion of the payment is paid by the patient checks unnecessary and trivial consultations, prevents imposition, and tends to economy; the practitioner would not be harassed and demoralized as he is now, and the conditions would promote consideration, self-respect, and thrift in the patient. The society that works on these principles is the National Deposit, so

I purpose giving data from recent annual reports, showing results:

The society in	1873	had	1,738	members.
,, ,,	1883	,,	4,588	,,
,, ,,	1893	,,	11,632	,,
,, ,,	1903	,,	103,735	,,
,, ,,	1909	,,	201,849	,,

This shows sound progress and appreciation.

Taking the three last annual reports, we find that in 1907 the membership was 169,100, and the medical pay £26,558, or just under 3s. 2d. a member; in 1908 the membership was 184,875, and the medical pay £29,867, or just under 3s. 3d. a member; in 1909 the membership was 201,849, and the medical pay £32,138, or 3s. 2½d. a member.

This is below the average club rates, yet gives more satisfaction; but it must be remembered that some members are attended privately. A few lose benefit by allowing their deposit to run out; this in our district of about 1,000 members averages less than ½ per cent. per annum. The management expenses average slightly under medical pay, but includes a magazine, annual meeting, advertising, also conducts assurance and other branches. This as under one-seventh compares favourably with other provident societies, which varies from one-fourth to one-sixth of income, and should be considerably less under State management.

This statement is only to give the results of thirty-seven years' experience of this system, not a change of attitude with regard to the principle of lay control.

Now it must be obvious that the State would not pay 10s. a year for an unsatisfactory service when they can get a satisfactory one for 3s. 2d.; nor would the State be justified in discouraging thrift and independence.

I am afraid I cannot agree with my friend Dr. J. H. Taylor in last week's correspondence, especially on the matter of the member's deposit failing. As humanity would not allow medical attention being withheld, the State insurance should be responsible, and could justly debit the full fees incurred after the contingency against the member to be repaid when he is able. I also think we can improve on the French system. I was glad to see it described, and also to observe that it needed vouchers, which some object to as troublesome but must admit necessary, and conduce to efficiency of treatment and accuracy of accounts.

The German system has failed; its neighbour Austria[1] has worked out a minimal tariff of fees for work done, and we, having the precedent, should take the hint.

Presuming the contributory system paying for work done is accepted and the minimal scale of fees for Dr. P. R. Cooper's "destitute" class (*a*) decided, I suggest that the simplest way would be to deduct for insurance a certain percentage from the earnings of the classes above (*a*) and to increase the minimal fees at a corresponding rate. So then the fees would be graded in proportion to the income.

The next question is the supply of ordinary medicines; in the Poor Law appointments the medical officer has supplied them, and it is doubtful whether the State would undertake the dispensing. But medical men in towns could combine in a dispensary.

The question of allowance to persons with large families dependent should be the responsibility of the State, as increasing the population is to the advantage of the State.

In other things the principles and limitations of the model rules for public medical service would apply.—I am, etc.,

Sittingbourne, May 21st. WILLIAM GOSSE.

SIR,—In reply to my communication in the JOURNAL of April 30th, drawing attention to the important editorial article on page 1007 of the JOURNAL, a most instructive correspondence has resulted.

No one of your correspondents has advocated the extension of the club practice system, but it is no breach of confidence to add that there is a most powerful influence at work in the highest places in the Association to give approval to such a scheme. The lately issued public medical service scheme is only one of many proofs available.

That any member of the Association should desire to elaborate and set up alongside of other systems of cheap charity clubs another one full of loopholes and opportunities for friction seems astounding, for approval of the club system by the Association would be directly against the opinion of the Representative Meeting at Leicester in 1905; it cannot harmonize the interests of the beneficiaries and the doctor, and therefore must fail ultimately; and however much padding is introduced, it certainly leaves the collar of servitude on the necks of the doctors.

Dr. Gough's communication published on May 7th (p. 1142) is very much to the point, and will bear repeated perusal. He suggests the preparation of a scheme on the payment-for-work-done system. Such a scheme is being elaborated, and no doubt will be published shortly.

For the present, however, it is not desirable to go too much into details. The questions to be asked now are:

1. Do you prefer a public medical service under the auspices of the Association or of the friendly societies?

2. Are you in favour of such a service being an extension of the club system or a scheme of payment for work done?

In other words, are you in favour of a system which places the doctor, even if he receives ten or more shillings a patient a year, at the beck and call of a beneficiary; or do you prefer a system which places the beneficiary with reference to a doctor in the identical position held by a private individual who can well afford to pay for all medical services as required?

These questions will be discussed at the Representative Meeting at the end of July, although no binding decision can then be come to.

The Association cannot run two schemes; the Government would turn elsewhere in order to obtain unanimity.

The recent discussion in the JOURNAL has narrowed down to the consideration of what means can be taken to prevent abuse or collusion if a scheme of payment for work done is adopted. Drs. Cooper and Taylor have in their useful communications discussed this. The deposit-private-account plan has been suggested. Dr. Taylor considers that this may run dry. He has not remembered that in future there will be possibly several ways to prevent this. The National Deposit Friendly Society scheme is what one may term a one-string system. In future there will be at least five sources from which this account could be aided. There will be (1) contributions from beneficiaries or their relatives, (2) contributions from the sick pay and made by friendly societies, (3) contributions from the Government through the trade unions under the proposed Unemployment Act, (4) contributions from old age pension schemes when extended, and (5) contributions from the trade unions in the event of strikes. By one or more of these means help can be counted on. The portion out of any such deposit account to be paid by the beneficiary for medical attendance need not necessarily be a large one; a quite small percentage would fulfil the object in view.

It is open to discussion whether this deposit account could or should be kept by friendly societies. It is a means of thrift, and such bodies would readily lend themselves as suitable bankers. In this way the Association would obtain the greatest security.

The profession should realize that this question of invalidity insurance, involving as it will quite ten million persons, greatly interests trade unions, master associations, and friendly societies, besides the Government and our Association. Therefore in the elaboration of any scheme all these must be duly consulted, and their assistance welcomed. But not before we have decided on the fundamental principles involved in the above questions.

In order to help to a decision in the profession, Dr. Milligan urges a referendum. Such a referendum amongst the members of the Association in the United Kingdom would give a sufficiently satisfactory guide, and could well be carried out next autumn.

In the meanwhile it would be of the greatest assistance if members in touch with club practice would point out the advantages and disadvantages of the two proposals. The Government has already received actuarial advice on the question. We cannot afford to let matters alone much longer.—I am, etc.,

London, S.W., May 28th. E. ROWLAND FOTHERGILL.

[1] BRITISH MEDICAL JOURNAL, May 7th, 1910.

SIR,—On this important subject there appear up to the present time two schemes before your readers (many more will probably arise as increased interest is taken in the matter), each claiming in some way to solve the question how medical men are to be paid for the work they will be called upon to do.

Of the two, the National Deposit system seems to find most favour, and well it should. Here we have a going concern, tested and found to work. The other scheme with Dr. Taylor's suggestions in comparison suffers. It would, I think, if carried out, be a good thing for the friendly societies and cheap consultants trying to uphold the dignity of a profession on a starvation diet. Dr. Taylor's objection to the National Deposit scheme is this, "that it would break down under long illnesses." Would any scheme meet this? Surely the cancerous, tuberculous, mental, and senile out-of-works are fit and proper cases for other places. On a wage of 20s. the unfit must be considered apart.

Would any decent medical man be for ever on the doorstep of a chronic case of this kind? The idea of a medical supervisor in such cases is quite funny. Dr. Taylor sees no chance of abolishing contract practice. Although he is a Representative of the Lancashire and Cheshire Branch, I hope this is not the opinion of its members, for here we have a scheme in the National Deposit Society which gives us that chance. Any such scheme as Dr. Taylor's means officialism—which the English character dislikes but tolerates—and this, coming between patient and medical man, must be denounced.—I am, etc,

Northwich, May 29th. A. HINES.

THE MEDICAL SICKNESS SOCIETY.

SIR,—As an original member of this excellent society, and until recently one of the committee, I welcome Dr. Kirby's letter. I quite agree with him that the society ought to be better supported by the profession, and that the principal reason why this is not the case is the apathy to which he refers. My experience on the committee has, however, convinced me that there are other reasons connected with the management of the society. This is too stereotyped and ultra-conservative, and an effort should be made to place it upon a more popular basis. It is true that the committee is supposed to be elected annually by the members; but as a matter of fact this is not so. The committee really nominates itself, and its election is a pure formality. Moreover, the committee has but a small part in the management. It will hardly be believed, but no motion is allowed to be proposed which has not the sanction of the chairman. The society is really a "one man" society. I have not a word to say against the chairman, whose single-minded devotion to the interests of the society for many years is above all praise. It is the system which I think should be altered.

The society is run on the strictest profit-making life insurance lines, with the result that the reserves are added to at the rate of something like £10,000 a year, and now amount to £233,735, which I contend far exceeds any possible liabilities. There is, moreover, no surrender value attached to the policies, and a member may go on paying premiums all his life, seldom or never making any claims. In return for the hundreds of pounds he has paid he gets, if he live to 65, a bonus of £40 or £50, otherwise he gets nothing. Another objection which I have frequently heard is that all benefits cease at age 65, just when a man is most likely to want assistance from the funds.

I quite think, with Dr. Kirby, that as 10 per cent. is deducted for management in all actuarial calculations, the 5 per cent. of this which is not required might well be spent in increasing the membership by advertisement and otherwise. I further suggest that the members of the committee should be drawn from the provinces instead of, as at present, almost entirely from the metropolis, and that their travelling expenses should be paid. Their election should also be bona fide by means of voting papers sent to the members. Local secretaries should also be appointed in all the chief provincial centres, whose business it should be to bring the advantages of the society to the notice of local medical men.—I am, etc.,

Portishead, May 23rd. W. G. DICKINSON.

AUSCULTATORY PERCUSSION AND FRICTION.

SIR,—In common with many others I was considerably surprised to read that this method of examination was supposed to have been discovered in 1898. When I was resident physician under the late Professor Cuming in 1886 in the Royal Hospital in Belfast, I remember him demonstrating the method and saying it ought to be more widely practised. Later on, about 1898, I showed at one of our Branch meetings forty to fifty charts of comparisons of the results of ordinary percussion and of auscultatory percussion; these were chiefly of the stomach, but contained also cases of differentiating the hepatic and pleural effusion dullness of the right side, the accurate delimiting of spleen and liver in a case of Banti's disease, and some other rare conditions. These charts I have still and occasionally make use of for clinical demonstration. Mapping out the heart I found to be quite hopeless owing to the increased intensity due to the closely-set ribs and cartilages. Personally I have the temerity to doubt its having been done in the manner depicted in some diagrams; but I should be under a debt to any one who would demonstrate its feasibility. The difficulty in marking out the upper border of liver and lower border of pleural effusion is also at times considerable; this may be due not merely to the necessity of avoiding the percussion of a rib on which the stethoscope is already placed, but also to the fact that the quantity of fluid in the complementary pleural sinus seems to vary. As long as there is still considerable pulmonary elastic retraction there is little fluid; but when the pull at the lung becomes exhausted some fluid pushes the liver away from the chest wall. The method is undoubtedly of great and reliable service in ascertaining the lower border of an enlarged liver and the lower border of a dilated stomach, although, like all methods of physical examination, it seems to fail us at times.

Dr. Hertz writes the letter of the specialist; he seems to think that bismuth meals and *x* rays are infallible. What will he make of the following? A patient lately consulted one of the leading surgeons in London; he sent the patient to a presumably leading *x*-ray specialist (I believe not Dr. Hertz), who gave bismuth meals and used the screen several times; he gave the patient's friends a large diagram showing the position of stomach, colon, etc. The surgeon recommended operation, which was soon performed. The laparotomy showed that the *x*-ray results were absolutely and hopelessly wrong and entirely misleading. With all the profession, I have been much indebted to the *x* rays, and received great assistance; but, as in every other method of examination—physical, chemical, bacteriological, microscopical — fallacies are liable to creep in and give the too credulous enthusiast an ugly fall.

As regards the size, shape, and position of the stomach, I find no method so generally satisfactory as the simple method of distension when the tube is in the stomach after washing out; and if it is impossible for any reason, or inadvisable, to pass a tube, very satisfactory results can be obtained by a little baking soda and tartaric acid; then by ordinary percussion the boundaries are marked out with a coloured pencil; immediately, with the eyes shut, auscultatory percussion is to be employed, and the results mapped out with another colour. The two often agree; sometimes there is 1 to 2 in. of difference at the lower border; this is a distended colon, and repeated ordinary percussion will show that the auscultatory has been the more reliable. Such results are confirmed by laparotomy sufficiently frequently to prove that they are quite as accurate, indeed more so, than those obtained by the bismuth meal and *x* rays. This last method seems like using a crowbar to knock down an open door.

We can all practise auscultatory percussion on a distended stomach; less than 1 per cent. of medical men can practise *x* rays; and it will be a distinct loss if the method drops from hospital teaching and textbook description. It seems legitimate, however, to hope for more aid in ascertaining the functioning of the intestine by bismuth meals. Auscultatory percussion, like simple auscultation and simple percussion, requires many years' practice, and the three methods will be in daily and hourly use, despite the lofty absence of the slightest doubt in Dr. Hertz's mind, when the bismuth meals and *x*-rays method will have

"suffered a sea-change into something rich and strange."—I am, etc.,

Belfast, May 28th. W. CALWELL.

SIR,—Your able correspondents have raised the questions of the when and by whom auscultatory percussion was discovered. As a little contribution to these inquiries perhaps you will kindly permit me to remind your readers that I gave a description of auscultatory percussion in my little book on "Physical Diagnosis," published in London in 1870, my account of this method of clinical examination being based upon my experience of its use in practice and in the teaching of medical students, and upon the description of auscultatory percussion given by Drs. Cammann and Clark, physicians of the United States of America, in the *New York Journal of Medicine*, and upon the account of their method given in the fifth edition of the late Sir William Aitken's admirable textbook on *The Science and Practice of Medicine*.

Cammann and Clark declared that auscultatory percussion required two skilled persons to bring out the result, one to strike and one to auscultate. I found that the process might be managed by one person alone, and that the method had some demonstrative advantage, especially in the differentiation of the cardiac and hepatic boundaries.—I am, etc,

Birmingham, May 30th. JAMES SAWYER.

SIR,—I notice that Dr. Allan Pearson claims to have discovered this method of mapping out solid organs some ten or twelve years ago. I well remember two senior students of Queen's College, Belfast, in the old hospital in Frederick Street, in the year 1870 or 1871, mapping out the liver by this very method.—I am, etc.,

Sheffield, May 30th. GEO. JOHNSTON, M.D.

DOES GASTROSTAXIS EXIST AS AN INDEPENDENT DISEASE?

SIR,—In the BRITISH MEDICAL JOURNAL of May 28th, p. 1322, Dr. E. C. Hort criticizes the title of my paper, "Does Gastrostaxis Exist as a Independent Disease?" because I use the term "gastrostaxis" as indicating a disease, when it merely implies a symptom. Perhaps I may be permitted to point out that this word is not one of my own choosing, nor one with which I agree in its present application, as should be evident from a perusal of my paper. I have used the word to represent the disease it was originally intended to describe, because this disease is the subject of the above mentioned paper. In the *Lancet* of June 29th, 1901, p. 1819, Dr. Hale White published a paper, "Are not some patients said to be afflicted with gastric ulcer, really suffering from a different disease?" and in the *Lancet* of November 3rd, 1906, p. 1189, the same author published a second paper on this disease, "Gastrostaxis, or oozing of blood from the mucous membrane of the stomach." In the latter paper Dr. Hale White used the following words:

> Sir Cooper Perry kindly suggested to me that the disease might be called Gastrostaxis—this is a satisfactory name, as oozing of blood from the stomach is always present at some time or another and may be the only symptom, and we already have the word epistaxis, some cases of which are probably due to an oozing of blood from the nasal mucous membrane.

The term "Gastrostaxis" was therefore invented to represent a definite disease, and it is in this sense that the word is generally used at present.—I am, etc.,

London, W., May 28th. CHARLES BOLTON.

THE SURGICAL TREATMENT OF GLYCOSURIA.

SIR,—I quite realize the main point which Mr. Mayo Robson wished to emphasize in his paper, namely, that by the early recognition and treatment of functional disorders of the pancreas, whether associated with glycosuria or not, the onset of true diabetes may be arrested in many cases. I fully share this view, and, as a physician, recognize the great value of Mr. Mayo Robson's work in drawing attention to it. The point on which I probably do not altogether agree with Mr. Robson has reference to the value to be attached to the existence of a positive pancreatic reaction as an indication for surgical as opposed to medical treatment.

My experience is in harmony with that of Mr. Robson and Dr. Cammidge in regarding the pancreatic reaction test as one of considerable value both in diagnosis and treatment, I cannot, however, subscribe to the view expressed by Dr. Cammidge in his letter of May 28th, that "a positive reaction is only obtained in cases where it is probable that the glycosuria is associated with active degenerative changes of an inflammatory character in the pancreas." I have found from a large experience of the test that complete fermentation of the urine invariably has the effect of rendering the reaction negative. The same result has been independently obtained by experts in the Royal College of Physicians laboratory. Our experience is apparently at variance with that of Dr. Cammidge. The point is one of practical importance. An extensive experience of the test in the past three years has led to my opinion being frequently asked as to its value in glycosuria and other conditions. The view I take is as follows: I value highly the information yielded by the test in the diagnosis and treatment of the different conditions referred to in my former letter; and for the reasons stated, I consider that the test has *no special value* in cases of glycosuria.—I am, etc.,

Edinburgh, May 29th. CHALMERS WATSON.

THE CULTURAL CHARACTERISTICS OF THE MICROBACILLUS OF ACNE.

SIR,—In the JOURNAL of May 21st, p. 1227, Dr. Molesworth published a paper in which he questions some of my results in the investigation of the bacteriology of acne vulgaris. Dr. Molesworth's paper appears to contain some inaccuracies or misconceptions. First, he states that I have expressed the opinion that staphylococci were only present in acne pustules as the result of accidental contamination, whereas in my paper published in the *Lancet* on April 10th, 1909, I divided cases of acne into three classes, and distinctly stated that, in two of these three classes, the staphylococcus acted as a pathogenic agent. Next he says that I have described my cultures as being made "by ordinary surface inoculation, by which method Sabouraud always failed to get growth," thereby intending to discredit my results. The method which I have described, however, was to squeeze out the contents of the pustule, take a loopful of pus, and transfer to an acid agar slope *en masse*. I followed this up by saying that, if the pus be spread thinly over the surface of the medium (which is the ordinary method of surface inoculation), no growth of the bacillus will be obtained. How Dr. Molesworth reconciles these facts with his statements is difficult to see.

Dr. Molesworth also emphasizes the fact that the comedo is the essential lesion of acne, a fact which no one disputes; but he goes on to say that I make no mention of the disappearance of comedones under the influence of treatment with a vaccine of the acne bacillus. If he had read my paper carefully he would have found the following sentence, referring to the results obtained with the vaccine: "In this way a large number of cases of acne, in all its stages, have been greatly improved, and in a fair proportion the lesions have totally disappeared." Now, the comedo being the essential lesion of acne, it is difficult to imagine any one describing the disappearance of all the lesions had the comedones remained.

Apart from these inaccuracies, there seem to be two points on which Dr. Molesworth and myself are at variance: (1) Whether or not the acne bacillus is *ever* the cause of suppuration, and (2) whether the organism I described was the true acne bacillus. On the first question the chief evidence he adduces is that of Sabouraud, that he found phagocytosis of staphylococci but not of bacilli in the pus, and that he was unable to produce suppuration by the injection of bacilli. Now, any one who has observed carefully films of pus from acne pustules must have seen the acne bacillus inside the pus cells; in fact, this state of things is even more common than the phagocytosis of staphylococci. In some films one can see both organisms taken up by the leucocytes, or even both taken up by the same leucocyte. As regards Sabouraud's second contention, I can only repeat that I have produced a pustular folliculitis by rubbing into the skin a broth culture of the acne bacillus, and in the pus from the lesions no organism other than the bacillus could

be found. On the other hand, if we find a case of pustular acne from whom we can obtain a pure culture of the acne bacillus time after time with only an occasional culture showing staphylococci, and if in the pus films we can only rarely find an occasional staphylococcus, I think we have a strong case for the bacillus being the cause of the suppuration. Such a case was a man who had suffered from pustular acne for many years, and who for at least eighteen months had been treated with staphylococcus vaccine without the slightest change in his condition. On repeated examination of the pus, however, the state of things alluded to above was found. A vaccine of the bacillus was administered, and in about two months the pustules had practically disappeared. The bacteriological findings and the result of the vaccine treatment are, I maintain, clear proof that in this case the bacillus was responsible for the pustulation.

Dr. Molesworth states that most of my conclusions seem to have been based on opsonic estimations, but a little thought would show that no conclusion as to the cause of the pustulation could have been arrived at from such observations, as, if the patients had pustules, they also had comedones, which we are agreed are caused by the acne bacillus, and so, being infected with the acne bacillus, they would tend to give abnormal opsonic indices.

Dr. Molesworth seems to have been unfortunate in that his work on the characters of my bacillus was done with cultures apparently obtained indirectly from me, which did not show the characters which I described in my paper. For instance, he states that the bacillus will grow readily on ordinary agar in forty-eight hours, but if he refers to my paper he will find the statement that on ordinary agar no growth can be obtained. It is true that I added a footnote just before the paper was published that I had obtained a growth of a bacillus on ordinary agar apparently similar to the acne bacillus, but in the light of some subsequent work I regard this not as acne bacillus but as a skin diphtheroid. It is curious to note that Dr. Molesworth was surprised when, about last November, he obtained from me a culture which agreed with my description of the organism. Surely it would be more reasonable to have been surprised when he found that the earlier culture did not agree with my description, and it seems to me that it would have saved him much trouble had he, when he found that the earlier culture did not fit my description, returned it to me with the suggestion that possibly some contamination had occurred.

The only culture which I have any recollection of giving direct to Dr. Molesworth is the last one he mentions, which he says is the true bacillus of acne. This bacillus, which he states is essentially an anaërobe, was isolated aërobically on acid agar in pure culture from an acne pustule in November, 1908, and was grown through very many generations of aërobic subcultures until November, 1909, when I handed the culture to Dr. Molesworth.

The case from which this bacillus came and the result of treatment with a vaccine derived from this strain of bacillus were described in my first paper on the subject.

I am quite in agreement with Dr. Molesworth as to the great advantage of anaërobic methods in the isolation of the acne bacillus from the lesions, and, whereas in my early work I found it almost impossible to separate the bacillus from staphylococcus, by using anaërobic methods as suggested by Sudmersen and Thomson I have found that it can be isolated with ease from every case.

If one uses a suitable medium, however, it is quite unnecessary in most cases to use anaërobic methods for subcultures, as the bacillus will grow well aërobically in many cases in the first subculture, and in practically all after one or two anaërobic cultivations. On glucose agar as recommended by Halle and Civatte, and later by Hartwell and Streeter,[1] and by Dr. Molesworth in the paper under discussion, one obtains cultures readily, but these cultures, as Dr. Molesworth says, take four days to appear, and it is difficult to obtain aërobic cultures. Whereas, on a more suitable medium, growth appears in twenty-four to forty-eight hours, and, as I have said before, it is very easy to educate the bacillus to aërobic growth. The medium I have used is ordinary agar (neutral) + one quarter of its volume of an emulsion made by shaking 10 parts of ascitic fluid with 1 part of oleic acid. To this is added a sufficient quantity of a solution of neutral red to give a distinct red colour, so that the white colonies may readily be detected. I have made comparative tests of this medium with glucose agar and acid serum agar, and in all cases growth was more vigorous and appeared earlier in the oleic acid serum agar.—I am, etc.,

London, W., May 23rd. ALEXANDER FLEMING, F.R.C.S.

[1] *Boston Medical and Surgical Journal*, December 16th, 1909.

Medical News.

IN consequence of the lamented death of His Majesty King Edward VII, the annual dinner of the Indian Medical Service will not take place this year.

AT the recent examination for sanitary inspectors under the Public Health (London) Act, 1891, held by the Sanitary Inspectors' Examination Board, thirty-four candidates passed, of whom twenty were women.

THE visit of the Irish Medical Schools' and Graduates' Association to Bath, which was postponed in consequence of the lamented death of His Majesty King Edward, has now been definitely fixed for June 18th, 19th, and 20th.

SIR DOUGLAS POWELL has resigned his position as a member of the consulting staff of the King Edward VII Sanatorium, and has been succeeded as chairman by Dr. Theodore Williams. Dr. Bertrand Dawson has been elected honorary secretary, in the place of Dr. Williams.

THE Annual Founders' Day Commemoration of the Middlesex Hospital was celebrated by a service in the hospital chapel on May 26th. A new organ has recently been erected by private benefactions, and among the gifts to the chapel during the past year is a marble font of remarkable design. The chapel is entirely free of debt.

AT a meeting at the Royal Sanitary Institute on Wednesday next Lieutenant-Colonel C. H. Melville, Professor of Hygiene at the Royal Army Medical College, will give an address on the Sanitary Service of the Territorial Force. The Chair will be taken by General Sir Harry Prendergast at 7.30 p.m.

MR. WILLIAM ROSE, Emeritus Professor of Surgery in King's College, and consulting surgeon, King's College Hospital, died in London on May 29th. Mr. Rose recently underwent an operation on the tongue, which unfortunately was not attended by any permanent benefit. We hope to publish some account of his career in a future issue.

THE following members of the medical profession are included in the list of persons accompanying Captain R. T. Scott upon his Antarctic expedition: Dr. E. A. Wilson, chief of scientific staff, zoologist and artist (Western party); Surgeon G. M. Levick, R.N., doctor, zoologist, etc. (Eastern party); and Surgeon E. L. Atkinson, R.N., doctor, bacteriologist, and parasitologist. Dr. E. A. Wilson acted as surgeon to the *Discovery* in the Antarctic expedition, 1901–4.

AT a council meeting of the Association of Medical Officers of Health held in London on May 25th, a letter was read stating that the Council of the British Medical Association had given its consent to a general meeting being held in London during the approaching annual meeting of the Association, and it was arranged that the meeting should be held on Friday, July 29th, and be followed by a dinner. Provisions of the draft Public Health Officers Bill of the British Medical Association were considered, and it was resolved to take steps to oppose in Parliament any bill differentiating between part-time and whole-time medical officers of health in respect of condition of tenure. It was decided to issue a memorandum stating the position of affairs at the present time and defining the policy of the Association of Medical Officers of Health.

THE Lunatic Asylums Visiting Committee of the Surrey County Council has addressed a letter to the members of the medical profession practising in that county, calling attention to the fact that for some time past an improper use of the county pauper lunatic asylum had been made by those whose social position should preclude their admission to such institutions, and stating that the committee has made arrangements for the reception of private patients at the new county asylum at Netherne, at rates varying from 1 guinea upwards. The committee hopes that by the co-operation of the medical profession the abuse of the provision made for paupers may be prevented, and that the county rates may cease to be burdened with an expenditure which should be met by relatives or friends of the patients, who thereby would prevent the stigma of pauperism attaching to the sufferers.

Obituary.

ROBERT KOCH, M.D.,

HONORARY PROFESSOR OF HYGIENE IN THE UNIVERSITY OF BERLIN, AND FORMERLY DIRECTOR OF THE ROYAL INSTITUTE OF INFECTIOUS DISEASES, BERLIN.

DR. ROBERT KOCH died on May 27th at Baden-Baden, where he had gone to recruit after a recent attack of pneumonia.

Our Berlin correspondent writes:

Robert Koch's death in Baden-Baden on May 27th has come as a great shock to his country, for none but the members of his own private circle seem to have known how severely a recent attack of influenza had affected his heart. Those who saw him and heard him speak at the meetings of the Hufeland and other medical societies earlier in the year carried away with them an impression of hale and hearty manhood and of a full reserve of bodily as of intellectual strength. He was in his 68th year, and though it would have been idle to expect that at such an age he would be able to emulate the achievements of his earlier manhood, it seemed that a period of valuable activity was still before him, and that the world would continue to profit by his unparalleled experience. Fate had decreed otherwise, and death came after a comparatively short illness. His friends and admirers must find comfort in the thought that he has been spared the sad consciousness, they the sad spectacle, of gradual intellectual decay. The facts of Robert Koch's biography, from his beginnings as a District Physician in Wollstein (a small town in Polish Prussia), his long and illustrious career at the Berlin University, the classical series of researches which raised bacteriology from the stage of uncertain experiment to its present high position in pure and applied science, and which made his name immortal in the annals of medicine—all this has been told and retold so often and so exhaustively that repetition here would be meaningless.

Scientific work, fearless, keen, close, and unremitting, was his greatest happiness, the very breath of his nostrils, and he could say in Shakespeare's words, "Joy's soul lies in the doing." At home and abroad, wherever German is spoken, Robert Koch's name was a household word, and his death will be felt as a personal sorrow by tens of thousands who can have but the faintest glimmering of what really constituted his superiority, and who would hardly know how to explain or justify the pride they took in him. That this is truly so, has been felt and expressed by the German Emperor. In his telegram of condolence to Robert Koch's widow, "I mourn deeply," he says, "the loss of the greatest German medical man (Arzt) of our time, and in common with the German nation I gratefully turn my thoughts to his beneficent (segensreich) life-work." By special wish of the departed, there will be no public funeral and as little mortuary ceremonial as possible. It was arranged that the remains should be cremated in Baden-Baden on May 30th; besides the widow only Geheimrath Gaffky (Koch's closest friend) and a very small circle of intimate friends will be present. Frau Koch has expressed her earnest desire that no floral tributes should be sent.

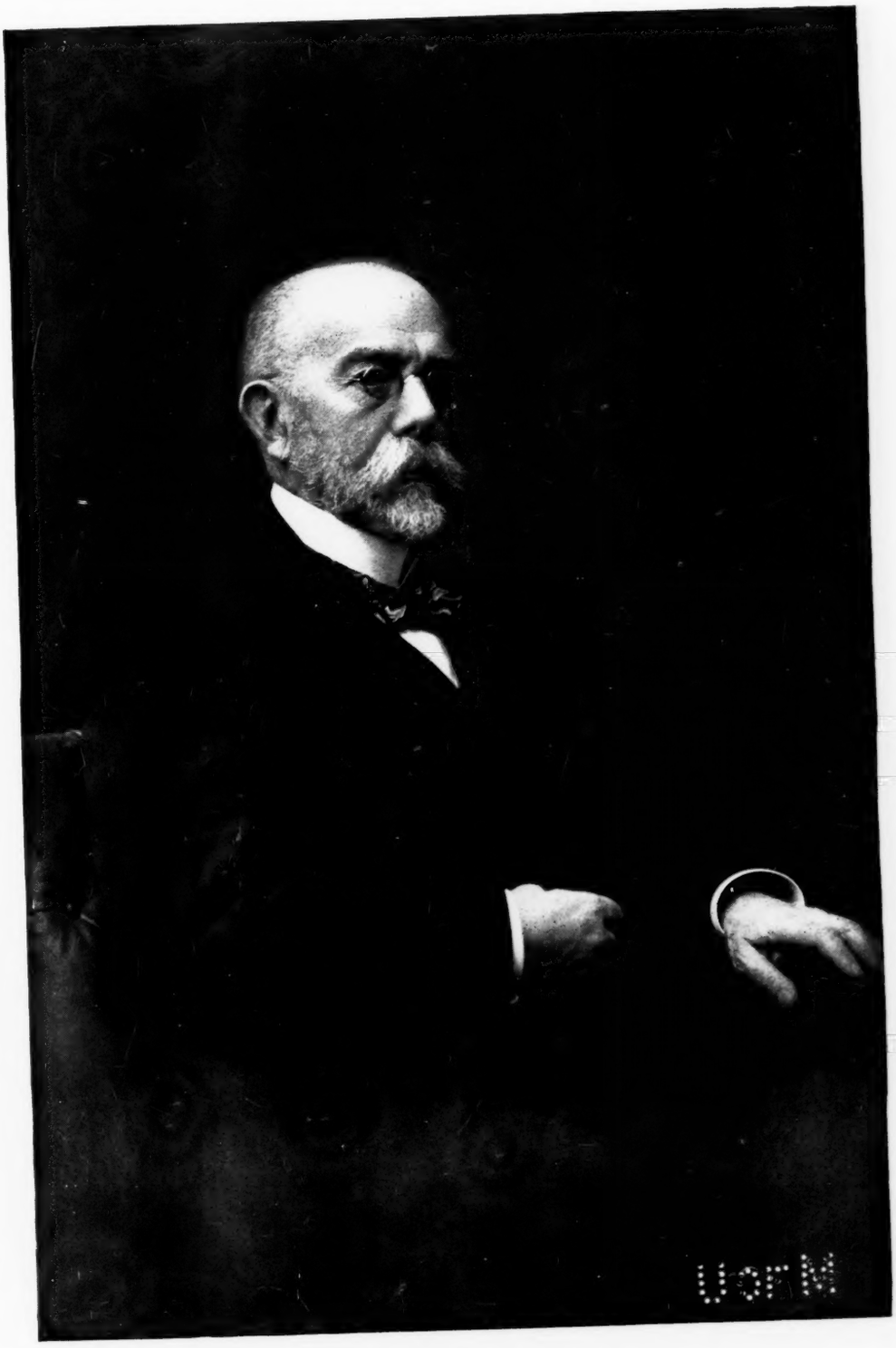
Robert Koch was born on December 11th, 1843, at Klausthal, Hanover. He was one of the thirteen children of an official in the Prussian Forestry Department. He studied medicine at Göttingen from 1862 to 1866. After serving for a short time as assistant in the general hospital at Hamburg he began life as a general practitioner (1866), first of all at Langenhagen, near Hanover, and afterwards at Rackwitz. In 1872 he became Medical Officer of Wollstein in Posen, and it was during the succeeding eight years for which he held this appointment that he began his epoch-making work in bacteriology. His first important paper on the etiology of anthrax, in which he announced the isolation of the bacillus, was published in 1876. This was followed in 1878 by an essay entitled, *Untersuchungen über die Aetiologie der Wundenfektionskrankheiten*, which was translated, at the suggestion, we believe, of Lord Lister, by Sir Watson Cheyne, and published by the New Sydenham Society in 1880 under the title *Investigations into the Etiology of Traumatic Infective Diseases*. It was on the strength of these investigations, the value of which was immediately appreciated throughout the scientific world, that Dr. Koch was in 1880 appointed by the Prussian Government to be a member of the State Public Health Department.

The particular importance of Koch's work up to this point resided not so much in the novelty or even in the importance of his observations as in the rigidly scientific method he followed, the severe criticism to which he subjected his own results, and the great improvement in technique due to his introduction of solid media for the cultivation and separation of micro-organisms. In 1881 he published in the first volume of the reports of the *Kaiserliches Gesundheitsamt* an essay on the investigation of pathogenic organisms in which he laid down principles which have ever since been followed by all bacteriologists. In this paper he said (we quote from the translation made by Sir Victor Horsley for the New Sydenham Society[1]):

> As a rule the following points must be observed in investigating micro-organisms from the point of view of sanitary science. In the first place, it must be definitely determined whether the organisms in question are pathogenic at all—that is to say, whether they can cause disease. Following on that comes the proof of their inoculability, that is, of the possibility of their transference from one individual to another previously healthy, this transference being attempted both on individuals belonging to the same species as those in whom the disease arose spontaneously or was artificially produced, and on individuals of other species.
>
> Next we have to trace out the mode in which the pathogenic organisms enter the animal body, to follow their behaviour outside the body in the air, water, and soil, and finally to determine what influence reagents may exert upon them either in the way of destroying them or preventing their development. Hygiene is only interested in their existence in animal tissues in so far as an explanation of the mode of infection may thereby be rendered possible—whether, for example, the pathogenic organisms are localized in the alimentary canal, whether they pass into the blood, or whether they form resting spores in the interstices of the tissues.

In this paper he insisted upon the value of the photographic representation of micro-organisms, and gave a full account of the methods he employed for obtaining pure cultivations, insisting that pure cultures were absolutely indispensable for the further development of knowledge of pathogenic organisms; after describing the practical difficulties in the way of making pure cultivations in fluids, he described the advantages to be obtained from the use of solid culture mediums, and the trials which he had made in this direction. He told how he was led to use solid cultures by observing that if a boiled potato is divided and the cut surface exposed to the air for a few hours, and then placed in a moist chamber so as to prevent drying, there would be found on the second or third day, according to the temperature of the room, on the surface of the potato, numerous droplets, almost all of which appeared to differ from each other. Taking a little of one of these colonies he spread it upon the cut surface of another potato which was then placed, with suitable precautions, in the moist chamber, and in this way he obtained a pure cultivation. After some experiments he hit upon the gelatine nutrient material as the best for general purposes, and he described the manner of its preparation, sterilization, and use. He drew attention to the fact that different nutrient soils are required for different kinds of micro-organisms, and indicated that one prepared with meat infusion and peptone was specially valuable for many pathogenic bacteria, but that unquestionably "the best nutrient material is a nutrient jelly made out of blood serum and gelatine." Since this could not be sterilized by boiling because the serum albumen would coagulate, he indicated the special care which must be taken to obtain the blood serum in the first instance as free as possible from contamination, and he also pointed out how, by the study of the appearance of colonies, it was possible without the microscope or with only very low powers to recognize with a very high degree of confidence the various bacteria of which the several colonies consisted. There can be no doubt that the introduction of this method of making cultivations on solid media constituted the greatest advance in bacteriological technique which has ever been made, and enormously advanced the science by giving to it a degree of accuracy which it had not previously

[1] Published in the volume entitled, *Bacteria in Relation to Disease* (1886).



Robert Koch (1907).

possessed. It will be noticed to what a degree of perfection Koch had brought the method at the time of his earliest publication.

The research which first made Koch's name widely known to the general public, and that which was, perhaps, in its far-reaching results the most important he ever undertook, was the inquiry which resulted in the identification of the bacillus of tubercle. The belief, long popularly held in many countries, that pulmonary consumption was communicable, had received confirmation from Villemin in 1865 and from Cohnheim in 1877, who showed that guinea-pigs inoculated with tuberculous sputum died from general tuberculosis. It was in 1882, in a paper on the etiology of tuberculosis communicated to the *Berliner klinische Wochenschrift*, that Koch announced that a bacillus of definite form and presenting well-marked characters was present in tuberculosis, and he showed that this organism fulfilled the four conditions which have come to be known as Koch's postulates: (1) That the organism should always be found microscopically in the bodies of animals having the disease; that it should be found in that disease and no other; that it should occur in such numbers and be distributed in such a manner as to explain the lesions of the disease. (2) That the organism should be obtained from the diseased animal and propagated in pure culture outside of the body. (3) That the inoculation of these germs in pure cultures, which had been freed by successive transplantations from the smallest particle of matter taken from the original animal, should produce the same disease in a susceptible animal. (4) That the organism should be found in the lesions thus produced in the animal.

The announcement met at the time with a mixed reception; it was immediately and even enthusiastically acclaimed by many who saw in it the link wanted to establish the hypothesis of the specific, communicable nature of tuberculosis, while by others, influenced by a belief in the hereditary nature of the disease, it was subjected to adverse criticism. In 1884, in the second volume of the *Mitteilungen des kaiserlichen Gesundheitsamtes*, Koch published an elaborate article on the etiology of tuberculosis;[1] in it he discussed the subject with great cogency of argument and wealth of experimental facts, which carried conviction to nearly every mind, and it was upon this article and upon other observations made or instigated by Koch that the modern crusade against tuberculosis in all countries is founded.

It was in November, 1890, that Koch startled the world by announcing that he had prepared from cultivations of the bacillus itself a remedy afterwards named "tuberculin," which he hoped might prove to be capable of curing phthisis with certainty in its early stage. The history of this matter is still, it may be said, too incomplete to warrant the expression of any definite opinion. No doubt the first trials of tuberculin gave rise to much disappointment. Many readers will remember the excitement which arose and the many pilgrimages which followed to Berlin; enthusiasts probably expected too much, and did not attach sufficient importance to some of the phrases in the original paper, by which Koch doubtless intended to avoid raising false hopes. The remedy was found to be uncertain in its practical results, and not free from the risk of seriously aggravating the diseased conditions for which it was used. It fell into discredit, and in spite of the improvements in the preparation introduced by Koch and his followers, has not again come into general use, although tuberculin in one or other of its forms is now being employed by many physicians and in many sanatoriums with precautions which theory and experience have suggested.

Apart from this matter of the attempt to devise an effective specific treatment of tuberculosis, Koch continued the investigation of its etiology in man and in animals, and in 1901, in an address to the British Congress on Tuberculosis held in London in July of that year, he surprised the scientific world and fluttered the public health department of every civilized country by asserting that if man be at all susceptible to infection by bovine tuberculosis, such infection must be of very rare occurrence, and insisting that the only main source of infection of tuberculosis is the sputum of consumptive patients. As the most effective means of combating tuberculosis he indicated the improvement of general domestic conditions under which the poor live, the compulsory notification of the disease, the provision of adequate hospital accommodation for patients in an advanced infective stage, and of sanatoriums for early cases, and the education of the public as to the nature of tuberculosis and as to the principles of the method for its prevention. The immediate result in this country was the appointment of the second Royal Commission on Tuberculosis, and the general result of its inquiries, as well as of those of other Commissions in the United States and elsewhere, has been to establish the general conviction that the tuberculosis of bovine animals is a real source of danger to man, and that restrictive legislation is therefore necessary.

In 1883 Koch was appointed a Privy Councillor, and in the same year nominated President of the German Cholera Commission which visited Egypt and India to investigate the disease. The Commission went to Egypt on August 16th, 1883, and within less than a month of its arrival Dr. Koch was able to report to the German Government that an organism was present in the disease which he believed to be specific; this hypothesis was subsequently completely confirmed by further experiments in India, which showed that the organism, commonly called the comma bacillus owing to its curved form resembling the comma mark used by German printers, fulfilled the postulates, as was fully set out by Koch himself in the addresses which he delivered to the conferences on cholera held in Berlin in July, 1884, and April, 1885.

Probably his study of conditions determining the dissemination of cholera, combined with his interest in questions concerning the etiology of typhoid fever, turned Koch's attention to the filtration of river water, a subject to which he made many important practical contributions. Of no less practical importance were his experiments with regard to disinfection, mainly carried out for the German public health department, in the reports of which the results are embodied. In fact, it was a characteristic of Koch's attitude towards scientific problems that he was not satisfied merely to establish laboratory facts—he was always ready to go on to investigate the conditions under which they could be applied to practical hygiene, a task commonly far more difficult than the repetition of experiments in a laboratory, and often raising side-issues which demand the highest scientific acumen for their elucidation.

In the departments of tropical parasitology, bacteriology, and hygiene Professor Koch did much valuable research work, and during the later years of his life the greater part of his time, in fact, was devoted to tropical problems. As has already been said, his far-reaching discovery that cholera—a special scourge of tropical and subtropical climates—was due to a spirillum or bacillus was made in 1883 as the result of investigations carried out in Egypt and in India.

India saw him again in 1897 studying plague, the germ of which had been discovered by Kitasato and Yersin in Hong Kong in 1894. Some years later Koch was at Rome following up the recent discoveries on malaria and the part the mosquito played in the spread of that disease. His next expedition was to New Guinea, its special object being the study of the severe type of malaria found in that country. This may be said to be his first real step into the domains of tropical parasitology proper. The results of this expedition were in many ways far-reaching, the most important being the suggestion that quinine might produce blackwater fever, and the proposal for completely stamping out malaria by the use of the same drug. As regards the first of these ideas, there is no doubt that Koch has often been misquoted; he does not seem to have meant it to be understood that he held that quinine was the one and only cause of blackwater fever, but that it might act as the excitant of blackwater in certain cases. The statement, being misunderstood, frightened many laymen and some doctors, and, by hindering the use of the drug in proper doses when necessary in ordinary malarial attacks, caused some harm, especially in certain of the German colonies. As regards the second idea—the stamping out of malaria by the general use of quinine—there is no doubt that if every one suffering from malaria were thoroughly treated with proper doses of quinine over prolonged periods the disease might be expected to die out, but practically such a procedure is impossible, and the true place of quinine must be that of a prophylactic and a

[1] Translated for the New Sydenham Society by Mr. Stanley Boyd (*Bacteria in Relation to Disease*, 1886).

valuable adjunct to other methods of attacking the disease, especially the general destruction of mosquitos.

Some time after this Koch was asked to visit South Africa, where in certain parts rinderpest was decimating the herds of cattle and flocks of game. He was not, after a careful study of the condition, successful in finding a specific parasite, but he proceeded to look into the question of East African fever, a form of Texas fever, which was spreading and killing off large numbers of cattle. His special researches on this subject were directed to the part the tick plays in the spread of the parasite, the *Babesia parva* (Theiler), which is the causative agent of the disease. Koch's visits to German East Africa about this time naturally directed his attention to sleeping sickness, the problems it raised, and the work that had been and was being done. Very soon he was in Uganda in the midst of the disease eagerly studying it. Such energy must be looked upon as remarkable when it is remembered that he was no longer young, and the amount of travelling and work he had already accomplished in so many unhealthy climates. Settling down at his camp in one of the Sesse islands, he studied the bionomics of the tsetse fly, the carrier of the trypanosomes, and also the curative effect of atoxyl, then newly introduced, on cases of the disease. At first it seemed as if a cure—analogous to quinine in malaria—had been discovered, but this we now know to have been too sanguine a view. The idea also that the fly lives only or chiefly on the crocodiles which abound along the lake shore has, in the light of subsequent investigation, been proved to be only partially true. Still, the work he did on sleeping sickness was of a very high standard.

This somewhat incomplete and scanty record shows how large a part of Professor Koch's work was done in the tropics and actually on tropical complaints. Though future generations will remember him chiefly in connexion with his brilliant bacteriological discoveries, yet a place will have to be kept for him in the records of tropical parasitology and medicine as well.

In 1885 Koch was appointed Professor of Hygiene in the Medical Faculty of the University of Berlin, and Director of the Hygienic Institute, then newly established by the university. In 1891 he was appointed director of the new Royal Institute for Infectious Diseases, and became an honorary professor in the university. This institute now forms a part of the great Rudolf Virchow Krankenhaus, and is commonly called the Koch Institute. It was described and illustrated in the Special Hospital Number of the British Medical Journal published on June 20th, 1908. During recent years Koch considerably limited his official activities, although he was still ready to take part in expeditions for the investigation of exotic diseases, and when at home to take his share in the medical and scientific life of Berlin, and, indeed, of Germany in general. He received, as was to be expected, many honours from scientific societies, and from his Sovereign the *Ordre pour le Mérite*. He was an Honorary Member of the British Medical Association, and a foreign Fellow of the Royal Society. On his 60th birthday in 1903 a number of his pupils presented him with a *Festschrift* containing a suitable dedication and a number of papers of high scientific value.

Professor Koch, although he was the author of many papers and reports to which we have referred by title or implication above, was not a voluminous writer. He seldom or never wrote or spoke save when he had something very definite, founded upon careful experiment, to say; but he was always ready to encourage other investigators, and in conjunction with Flügge, who now holds the chair of hygiene in Berlin, he founded in 1899 the *Zeitschrift für Hygiene*.

For the photograph reproduced as a special plate we are indebted to the kindness of Dr. Heron, to whom it was presented by Dr. Koch, at Christmas, 1907.

We are indebted to Dr. C. J. Martin, F.R.S., Director of the Lister Institute, for the following interesting account of Koch's work and estimate of its value to bacteriology and hygiene:

The death of Professor Koch has removed from us one of the great discoverers of medicine. His researches have exercised a profound influence not only upon the development of medical science, but also upon the welfare of mankind. Tribute to his memory is due from us for the enrichment of our knowledge, and from the whole human race for the benefits which have directly and indirectly followed from his discoveries.

To gain insight into the value of the work of a great man it is often profitable to study more particularly the earlier portion of his career. Later his activities become so various and so often complicated by the co-operation of others that it is difficult to define so clearly the effect of his genius. This is certainly so in the case of Robert Koch.

When Koch commenced the study of infectious diseases the significance of microbes in putrefaction and wound infection had been established by Pasteur and Lister. At this early stage of bacteriology, however, the methods proper to the science were undeveloped, and although a number of cardinal facts had been brought to light, knowledge on the subject was chaotic.

Diseases of man and animals presented unlimited problems but the means to attack them were lacking. Needless to say, to devise successful means to attack a problem involves a clear insight into the nature of the problem, and fertility of resource in overcoming the technical difficulties arising in every experimental inquiry. With both these qualities Koch was richly endowed. He defined clearly the exact point at which knowledge had already arrived, and not only saw what was the next question to ask of Nature in order to advance one step further, but devised experimental methods which ensured an answer to this question. In this last faculty Koch was pre-eminent, and the methods of this youngest of the sciences are to a large extent the methods of Robert Koch.

Koch commenced the study of bacteria when district surgeon at Wollstein in Hanover, and two of his earliest papers—that on the etiology of anthrax, founded on the life-history of *Bacillus anthracis*, published in 1876, and that on experiments on the etiology of wound infections, published in 1878—have become classics. This work was carried out in addition to the duties of a practitioner of medicine, and without the assistance of any laboratory equipment beyond a good microscope. Pollender and Davaine had seen the anthrax bacillus twenty years earlier in the blood of infected animals, and in 1863 the latter had shown that the blood containing the bacilli was capable of infecting animals if inoculated into them. That these bacilli were in reality the cause of the disease was, however, controverted. Koch reasoned that if the anthrax bacilli were the living virus, and as the disease remained attached to certain pastures, they ought to grow outside the body as well as inside. He succeeded in cultivating them in broth throughout many generations, and watched their growth upon a hot stage. He discovered that they formed spores when grown outside the body or when blood containing them was allowed to dry; determined the greatly increased resistance of the spores to physical and chemical agents; and showed that as long, and only as long, as the broth or dried material contained bacilli or spores capable of propagating themselves, these remained infective for animals.

The importance of the anthrax work can hardly be overestimated. It afforded for first time convincing proof of the causal relation of a particular bacillus to a particular disease. Owing to the unmistakable character of the bacillus, and its presence in large numbers in the blood of infected animals, its study could be profitably undertaken with the means available.

Koch was unremitting in his efforts to improve his microscopical technique, and in the same year published a paper on the investigation, preservation, and photographing of bacteria, in which an account of the preparation and staining of dry films is given. The method described is very much that still in daily use. The paper is accompanied by photomicrographs of bacteria, the excellence of which is rarely equalled at the present day. Koch pointed out that he had persevered in this work because he was obsessed with the idea that the results of investigations on the parasites of infective diseases had their foundation in the incompleteness of the methods used.

Koch's interest in traumatic infectious diseases seems to have been stimulated by the disasters due to these causes amongst the wounded in the Franco-Prussian war. The results of Lister's antiseptic methods had demonstrated

that means directed against the infection of wounds with microbes obviated these diseases. Micrococci and bacteria had frequently been found in pus, diphtheritic ulceration, in the tissues at the edge of advancing erysipelas, and in pyaemic deposits. Micro-organisms had also been discovered in the blood in relapsing fever and puerperal fever. Further, Coze and Feltz and Davaine had inoculated rabbits with the blood of patients dead of puerperal fever, and had succeeded in carrying on the infection through successive generations of these animals. Nevertheless, the evidence that a particular organism was the cause of a particular disease was far from conclusive. Many observers concluded that bacteria were universally present in the normal body. Others failed to find any organisms in obviously septic conditions. There was no practicable means of separating one coccus from another coccus, and bacteria of apparently identical appearance were found to be associated with a variety of diseases. The parasitic nature of traumatic diseases was probable, but unproven.

Koch began his work on traumatic infective diseases with the conviction that the most fruitful line of investigation would be a comparative one, namely, to induce septic infections in animals and see whether they would "breed true" upon successive reinoculations, controlling the experimental observations by careful microscopic examination throughout. He used for the purpose of infecting his animals putrid serum or bouillon. This, he found, contained a large variety of organisms of different sizes and shapes, which he was unable to separate from one another. He hoped that, implanted into the body of an animal, a selection might occur, and only those pathogenic for the particular species survive. His anticipations were justified, and the injection of small quantities of such materials was followed in a number of instances by the development of a fatal illness with the presence in the blood of one only of the many forms present in the original material. He was able to carry on the disease from one animal to another always with the same symptoms and the presence of the same organism. Moreover, if the same material containing a variety of organisms were injected into animals of different species one microbe flourished in the one species and another in the second, showing that a particular microbe could establish itself in one animal and not in a neighbouring species.

The animal body is, as Koch said, an excellent apparatus for pure cultivation, and he succeeded to some extent in doing what had been the stumbling-block to all progress—namely, to isolate one organism from another.

The publication of these three papers raised the hitherto obscure physician of Wollstein to the first rank of scientific investigators, but they were merely the beginning of his scientific career. Their importance and the genius of their author were recognized by Struck, the enlightened Director of the German Health Office, who invited Koch to accept a position in that department. The chemical and hygiene laboratories attached to the department had been extensively equipped, but bacteriology was naturally unprovided for. A room was, however, found for him, and in these humble surroundings he settled down to pursue his inquiries. He was soon joined by Loeffler and Gaffky, who became his first assistants. The three worked together enthusiastically in the one room, fitting up the laboratory, inventing apparatus, and improving methods. The great problem confronting them was to find a practicable means of obtaining a pure culture outside the body. Koch before long accomplished this by the simple expedient of cultivating upon nutrient gelatine and subsequently inoculating media from single colonies. The discovery of this technique made advance possible. Another line of investigation undertaken at this time, on account of its importance in the technique of bacteriology, was concerned with disinfection and sterilization. The experiments of Koch and his pupils, made upon pure cultures of pathogenic bacteria, is the foundation upon which all later work has been built. It also led to the substitution of the more convenient steam sterilization for dry heat.

One cannot emphasize too strongly to what a large extent Koch provided the tools of inquiry at each stage in the development of bacteriology, but he did not rest there. From 1880 onwards followed a period of extraordinary activity. In a dozen years the etiological factor of eleven important human diseases—tubercle, cholera, typhoid, diphtheria, erysipelas, tetanus, glanders, pneumonia, epidemic meningitis, influenza, and plague, as well as numerous animal diseases—was discovered by Koch and his pupils.

After the completion of his work on anthrax, Koch's individual efforts were directed more particularly to the discovery of the infective agent in tuberculosis, whilst diphtheria and typhoid were being investigated by his assistants, Loeffler and Gaffky. The work of Klencke and Villemin and the further experiments of Cohnheim and Salomonsen had established that the disease tuberculosis was due to an infective agent which was capable of propagating itself in the animal body. Miliary tubercles were examined microscopically for some signs of a microbe, but for long without success. At last, by a modification in the method of staining, a fine bacillus was discovered, and its presence in the majority of preparations established. Efforts to grow the organism in pure culture at first failed, but subsequently, by infinite patience, he succeeded in growing it upon coagulated serum. Once isolated and grown upon a succession of media the establishment of the bacillus as the etiological factor presented no difficulty, and at the Physiological Society in Berlin on March 24th, 1882, Koch presented the proofs that he had discovered the cause of one of the most widespread and dreaded of human diseases.

From the discovery of the cause of a disease its prevention or cure does not necessarily follow, but in the campaign against an enemy it is of first importance to be acquainted with his nature and peculiarities. Koch interested himself at once in studying the life-history and methods of warfare of the tubercle bacillus. These studies were, however, interrupted. Cholera was in Egypt and threatened Europe, and the German Government organized a commission with Koch as leader to proceed to Egypt to study the disease and draw up recommendations for dealing with it should it reach Germany. Shortly after reaching Egypt the outbreak there ceased. In the meantime, however, Koch had obtained important information leading him to suspect a particular comma-shaped bacillus as the specific cause of the disease. The material for the furtherance of his inquiry having failed in Egypt, Koch proceeded to India, where cholera is endemic, and completed his investigations. He satisfied himself that the comma bacillus was the constant companion of the cholera disease, that its abundance was commensurate with the severity of the attack, and that it penetrated beneath the epithelium in the affected part. He never succeeded in obtaining it from the healthy or diseased intestine other than in the case of cholera. It was comparatively easy to obtain it in pure culture, and its characteristics were studied, but the completion of the evidence to convict this organism was lacking, as a true cholera process cannot be artificially produced in any of the laboratory animals. Incidentally, whilst in Egypt he discovered amoebae in dysentery and the bacillus responsible for the widespread ophthalmia in that country.

As previously mentioned, at the time Koch was ordered to Egypt to investigate cholera, he was engaged in the attempt to discover some means to modify the infection by the tubercle bacillus in the animal body. Proceeding on the assumption that the tubercle bacillus exercises its pathogenic effects by means of a soluble poison, Koch investigated the action of dead bacilli and their products upon normal animals and animals already infected with the disease. From his experiments he was led to the conclusion that not only could a guinea-pig be immunized against tubercle by repeated injections of the products of the tubercle bacillus, but that the disease could be brought to a standstill by this means. Later (1890) he published his well-known results upon tuberculin, by means of which tuberculosis could be not only diagnosed, but in the early stages might, he hoped, be cured. The possible remedy was enthusiastically welcomed by the whole world. Medical men thronged to Berlin from all parts to see the results of its application. The treatment was applied to all sorts of cases in what we now know were colossal doses. The results were disappointing, and in many cases disastrous. The premature publication of his results with tuberculin was a misfortune, and the failure of the treatment obscured for the time being the great value of Koch's work, and even exposed

him to opprobrium. Koch had, however, made a great discovery, but underestimated the potency of the agent he had brought to light. Tuberculin is an invaluable diagnostic for early tuberculosis in man and animals, and is universally employed. Since 1890 it has been consistently employed by a number of physiclans all over the world for the treatment of tubercle with what appear to be beneficial results, and of recent years its employment has again been resuscitated by Wright, and is now administered in much smaller doses, and with careful observance of the effect of each injection by measuring the opsonic index. Moreover, the significance of the discovery of tuberculin as the first essay in vaccine therapy must not be lost sight of.

During the next eight years, 1891–1899, Koch was occupied with investigations into a large number of diseases of men and animals. The list includes leprosy, rinderpest, plague, surra, Texas fever, and malaria, and necessitated his spending much of his time abroad. It would be difficult to adjudge just how much of the knowledge gained upon these diseases to attribute to Koch, as the problems were also under investigation by numbers of other observers, and, moreover, he was usually accompanied by one or more distinguished workers, as in the case of the German Plague Commission which visited India. It is very clear, however, from the published reports and papers that his insight into the nature of infectious diseases and his unrivalled experience were never directed to any of these inquiries without materially enhancing our knowledge of the causation and the means by which each disease was spread.

Koch's work upon malaria needs special mention. Whilst in tropical countries his attention was naturally drawn to this disease, Laveran's discovery of the malarial parasite had been made, but the mechanism of the spread of the disease was unknown. Theobald Smith's proof that Texas fever was transmitted by ticks, and Bruce's demonstration that the tsetse-fly disease was due to a protozoan parasite and conveyed by the fly suggested to Koch, as to others, that malaria might be transmitted by a biting insect. He was, indeed, engaged upon experiments with mosquitos and had nearly satisfied himself that malaria was transmitted by a mosquito when Ross published his results. Koch was, however, largely instrumental in showing that the three types of malaria were associated with three distinct parasites, and that none of these were infective for the lower animals—a result of great importance from the point of view of malaria prophylaxis. He also cleared up the difficulty as to the reservoir of the disease in a population the adults of which could not be found to harbour the parasite, by showing that the young children, even to the extent of 90 to 100 per cent., were infected.

In 1901 Koch reported to the British Congress on Tuberculosis the results of experiments which he had carried on during the preceding two years in conjunction with Schutz upon the pathogenicity of the human tubercle bacillus for domestic animals. Briefly stated, Koch's main conclusion from their experiments was that human tuberculosis differs from bovine, and cannot be transmitted to cattle. The far more important question, "Is man susceptible to bovine tuberculosis?" was then considered. No direct experimental proof of this converse proposition is possible, but from the fact that men—and particularly children—consume large quantities of bovine tubercle bacilli in milk and yet tuberculosis of the intestine is rare, Koch concluded that man is little if at all susceptible to the bovine variety of the bacillus. He pointed out that the question whether man is susceptible to bovine tuberculosis at all was not decided, but expressed the belief that infection of human beings is of so rare occurrence that it is not advisable to take any measures against it. It was the last conclusion that caused so much consternation, as most countries were embarked in considerable expenditure with a view to minimizing the chances of infection by milk and meat. Koch may have been unwise in stating his views, but he did so with the conviction that bovine tubercle is not an important source of infection, and with the earnest desire that we should not squander our energies in subordinate directions, but should concentrate them in efforts to diminish man-to-man infection through the respiratory tract.

The importance attached to a considered opinion of so distinguished an authority led to the appointment of numerous commissions of inquiry in Europe and America. Of these the work of the English Royal Commission has been the most extensive. These investigations have shown that the sharp distinction between the two varieties, though usually manifest, is not so absolute as Koch supposed, and that bacilli of the bovine type are not so uncommonly found in human infections as he was led to believe. The frank expression of opinion by Koch on this subject has been the stimulus for an enormous amount of valuable work in connexion with tuberculosis throughout the civilized world, and it is not improbable that he has thereby conferred as great a benefit upon mankind as by the discovery of the tubercle bacillus.

The relative importance of infection from one another through sputum and from bovines through dairy produce is still an open question, and will not be settled for many years to come.

Before closing this sketch of his life-work it remains to add a few words upon Koch as a teacher. In 1885 he removed from the Health Department and became a professor in the faculty of medicine and director of the new Hygiene Institute attached to the University of Berlin. Here, with the help of his assistants, numbers of those who later became the leading bacteriologists in all countries, were trained in his methods and endowed with some portion of his enthusiasm and earnestness. The admiration and affection with which he was regarded by his pupils and the absolute faith which he inspired amounted in many cases to actual worship, and afford further evidence of the essential greatness of the man.

There have no doubt been many discoverers as great as Koch, but it must be seldom that one has been so individually associated with the whole development of a science which has grown up around him, so that the title "Father of Bacteriology," conferred upon him by his admiring compatriots, is entirely appropriate, provided we reserve that of "Grandfather" for Louis Pasteur.

Sir Watson Cheyne sends us the following appreciation:

My acquaintance with Professor Koch dates back to 1879, when I was asked by the New Sydenham Society to translate his monograph on infective diseases of wounds which had recently appeared. I first, however, made his personal acquaintance at the International Congress in 1881, when he brought forward his great work on the method of cultivating micro-organisms. Since that time I have had the great pleasure of his friendship, and the opportunity of working for several weeks on two occasions in his laboratory in Berlin. Dr. Koch appeared somewhat retiring to strangers, but when one got to know him intimately one found that he was a most genial companion, and he was ever ready to help in one's work in every way possible. Like every one who has been intimately associated with Professor Koch, I conceived the greatest admiration and affection for him. He was an extremely conscientious man and was most particular that nothing should be published by him or from his laboratory that so far as he could judge had not been thoroughly verified and would stand the test of time. He was also a man of singular insight and dogged perseverance, and forms a worthy member of the great trio—Lister, Pasteur, and Koch—who have done so much to throw light on infective diseases and not only to throw light on their nature but to oppose their ravages. There can be no question that the great advances which have been made in bacteriological science are to a very large extent the result of Koch's work.

Koch's first bacteriological investigations were in connexion with the anthrax bacillus, and he was really the first to give a complete demonstration that these bacilli were the cause of anthrax. This was shortly afterwards followed by papers in Cohn's *Beiträge* on methods of staining bacteria and on microphotography of bacteria. Then followed the monograph on infective diseases of wounds to which I have already referred. All this work, it may be remarked, was done while he was in general practice or medical officer of health in Wollstein. In his work on infective diseases of wounds he demonstrated for the first time that there were a number of different kinds of pathogenic bacteria which produced infective diseases in the lower animals, and he showed that each had specific characters, and always produced the same set of symptoms and pathological effects. He also called special attention

to the proper illumination of stained specimens under the microscope with special reference to Abbe's condensor and Zeiss's lenses. Shortly after the publication of this monograph Dr. Koch's work was recognized in Germany by his appointment as director of a special laboratory for the study of infective diseases in Berlin, and in this institution he worked for many years, and not only produced a large amount of work himself, but trained up a great many men who have done much to bring the science of bacteriology to its present condition. Perhaps his most fundamental piece of work was the introduction of solid media as a means of cultivating micro-organisms. The immense advance which thus resulted can only be appreciated by those who had been struggling to obtain and carry on pure cultivations of bacteria in various fluids, but, apart from the fact that by the introduction of solid media he was able to obtain and carry on pure cultivations, it turned out that by the peculiar methods of growth of different bacteria on various solid media characteristics were found which helped very much in the identification of the various species. Following in rapid succession were his important work on Disinfection, the discovery of the Tubercle Bacillus in 1882, and the demonstration that it was the cause of tubercle, and the discovery of the Cholera Bacillus in 1884. Translations of all these epoch-making papers will be found in a collection of selected essays on micro-parasites and disease, which was published by the New Sydenham Society in 1886.

From the time when Koch discovered the tubercle bacillus, his great aim was to find some remedy for that disease, and after years of laborious work he produced the substance tuberculin, which created so much excitement in 1890. There can be no doubt that the publication of his investigations was hurried more than he himself desired, with the result that the material was extensively used before its properties and its disadvantages had been properly investigated. The failure of tuberculin as originally produced to attain the desired object did not, however, discourage Professor Koch; he continued to labour at the subject, and subsequently produced a tuberculin which seemed to be free from the disadvantages of the original material. It is this tuberculin which is now being extensively employed in the vaccine methods of which Sir Almroth Wright is the chief exponent.

I need not follow up Koch's work in recent years. He has up to his recent illness devoted himself night and day to advancing the subject of bacteriology, and has spent years in tropical climates investigating such diseases as plague, rinderpest, malaria, sleeping sickness, etc., and on all of these he has thrown a great deal of light.

J. J. Y. DALGARNO, M.B., C.M.,

SENIOR ANAESTHETIST, ABERDEEN ROYAL INFIRMARY.

IT is with great regret that we announce the death of Dr. Dalgarno, which occurred at Tain, Ross-shire, on Saturday, May 21st, with startling suddenness. Dr. Dalgarno had gone north by motor on Friday afternoon, with Mr. H. M. W. Gray, to perform an operation, and at 7.30 a.m. on Saturday morning he was found dead in bed, death being attributed to heart failure. The news came as a great shock to his many friends, and his death is widely regretted in the medical and lay communities of the north-east of Scotland, by whom his eminent services as an anaesthetist were much appreciated.

Dr. Dalgarno was a son of the late Rev. James Dalgarno, who was for many years the respected minister of the Free Church of Peterculter. He graduated in Arts in 1883, and subsequently studied medicine at Aberdeen University, where he had a distinguished career. After graduating M.B. and C.M., he became a resident physician in Aberdeen Royal Infirmary, and thereafter succeeded to the practice of the late Dr. Wight in Aberdeen. He enjoyed a high professional reputation, and proved a most successful practitioner. For ten years he acted as one of the physicians at the Aberdeen Dispensary, and his clinical teaching was much appreciated by successive generations of students. At the time of his death he was senior medical officer to the Aberdeen Parish Council, and had charge of its hospital at Oldmill; he also held the post of Senior Anaesthetist to the Royal Infirmary and University Lecturer in Anaesthetics. He was a keen Volunteer, and devoted much of his spare time to that movement, being attached as medical officer to the Royal Engineers.

Dr. Dalgarno was only 48 years of age and is survived by his widow and three daughters. He was a man of wide culture, of marked geniality of disposition and possessed of social qualities of a high order which made him highly respected both in professional and in private life, and his death will be greatly regretted by his patients and and by all to whom he was known. While his reputation as a practising physician stood undoubtedly high it was as an anaesthetist that Dr. Dalgarno made his mark in Aberdeen and the north-east of Scotland, and his sudden and unexpected death leaves a vacancy it will not be easy to fill. As a conductor of chloroform anaesthesia particularly his skill was widely acknowledged, and would have been difficult to surpass. Indeed, his death and the sudden blank it has made in the anaesthetic circle has brought into prominence the apparent lack of appreciation in the north of the importance and responsibility of the anaesthetist's office. The small proportion of disasters that have occurred even though chloroform has been the anaesthetic of tradition and of choice since its introduction until a year or two ago, when ether has been displacing it more and more both in hospital and private practice, may have had a good deal to do with this apparent lack of recognition of the gravity of the work.

Medico-Legal.

INQUEST ON A PATIENT TREATED AT THE SANDOW INSTITUTE.

AN inquest was held by Mr. Hugh Donnithorne, Deputy Coroner for South Hants, at Drayton, near Portsmouth, on May 26th, with regard to the death of Henry Harridge Phillips, aged 39, a grocer and provision merchant, of Southsea.

The Coroner, in opening the proceedings, said that the deceased at Whitsuntide had visited his father-in-law at Drayton; he was not well when he arrived, and on May 23rd he went to bed, as usual, at 10.30 p.m., but complained of sickness. Dr. Wood saw him between 11 p.m. and midnight, when he was better, but early on the morning of May 24th he complained of pain in his stomach, and died at 2.45 a.m. During the previous five weeks he had been undergoing the Sandow physical culture treatment.

Retired Lieutenant James T. McDonnell, R.N., said that the deceased, who was his son-in-law, had been ailing for some time, suffering, according to the report of the doctor, from dilated stomach; he had been under medical treatment for nearly seven years; he had been undergoing the Sandow treatment five or six weeks, and thought it was benefiting him. He went once a week to the Sandow Institute and had instructions to carry out—bathing regularly, and exercises.

Mr. Lewis of South Square, Gray's Inn, who watched the case on behalf of Sandow Ltd., interposing, said that he was prepared to call the two doctors who saw the deceased at the Sandow Institue. Mr. Hansard, one of the directors, was also present.

Witness continuing said that the deceased was subject to attacks of sickness or biliousness similar to that which terminated fatally. In reply to the foreman of the jury he said that the treatment just before his death was by dumb-bell exercise after his bath, such as a child might take. He had been as well all day as usual, and had taken supper. In reply to Mr. Lewis witness said that the exercises the deceased took were very light, simple exercise which a little child of seven could do. In reply to the foreman he said he had every belief that the exercises had nothing to do with the death.

Mrs. McDonnell, wife of the last witness, said she was called at 1 a.m. on May 24th, by her daughter, the deceased's wife; he had had an attack of sickness at 11 p.m. the night before, and when she went to his room his condition was the result of the sickness and pain in the stomach. The pain was less severe than it had been at 11 p.m. He had taken no medicine, but had a a little Benger's food and milk about 8.30 p.m.

Dr. Maurice Dale Wood, practising at North End, Portsmouth, said he was called on the evening of May 23rd by a telephone message which stated that the deceased was in a serious condition, gasping for breath. He was informed that the patient was not being attended by a medical man at the time and had not been so attended for some weeks previously. When Dr. Wood saw him he was sitting up in bed, the urgent attack having evidently passed off; he expressed himself as feeling comfortable. Dr. Wood examined his chest and abdomen, and as he had apparently recovered from the attack for the time being, gave instructions what to do in case there was a return. He did not consider that there was any immediate danger of death, and hoped that the patient would be refreshed by a good night's rest. Next day he heard that the patient died during the night. When the patient was taken faint a second time messengers were sent to Dr. Emmett with whom Dr. Wood is associated in practice, but before Dr. Emmett could arrive the deceased had expired. The further evidence of Dr. Wood was as follows: I made a *post-mortem* examination of the deceased yesterday, and found that there was a perforation of the stomach situated

in the region of the lesser curvature, and through the perforation the contents of the stomach had escaped into the peritoneal cavity, causing peritonitis. I also discovered at the pylorus, the outlet of the stomach, there was a tumour, completely surrounding the opening. It was in the form of a ring, and instead of the opening being large enough to admit the passage of any solid food, it was the size of a cedar pencil. All the other organs were practically healthy. There were signs of general peritonitis.

The Coroner: What was the actual cause of death?—Death was due to shock following on the perforation.

How was the perforation caused?—It was brought about by the weakening of the walls of the stomach, due possibly to ulceration. It is a distinct and definite cause of death. As the stomach would admit of food entering it, and would admit of nothing passing through in the way of solid food taken, it would naturally cause irritation, and tend to the ulceration.

The Foreman: If he had been medically treated could the disease have been discovered by a medical man while deceased was still alive?

Witness: It was quite possible. I only saw him once, and I expressed the opinion that there was something in the way of a new growth in the stomach.

The Foreman: Do you consider the exercise treatment he was undergoing was weakening the walls of the stomach?

Witness: I don't think it was favourable, at any rate, and I don't think he was benefited by taking solid food.

Would the exercise treatment weaken the stomach and hasten the cause of death?—Anything in the way of exercise would weaken it, and tend to cause the rupture or perforation. The recognized treatment in such a case of this sort is complete rest and restriction to fluid diet.

The Foreman: Would the ring tumour in the pylorus have been the growth of sometime previous?—I am not prepared to say how long; it is impossible to say, but it had been there for some time.

The Foreman: Do you think if he had had a medical man some time previously he would have recovered?—It is possible, if an operation had been performed, that it would have prolonged his life.

A Juryman: Would the retching and sickness cause the perforation?

Witness: Very possibly.

Maurice Edmund Arnold Wallis, M.R.C.S., L.R.C.P.Lond., Ashford, Middlesex, produced the chart and described the formula at Sandow's establishment. He said: When an applicant calls on Mr. Sandow with a view to getting some benefit, the object of his call is first ascertained, and full particulars taken under specified headings as to his general health and his habits of life. These particulars are taken by one of Mr. Sandow's managers. After that a doctor is called in to examine the applicant as to the condition of his organs, and to see if exercise treatment is permissible. If the exercise treatment is considered inadvisable from a medical point of view, Mr. Sandow forthwith declines to have anything to do with it. If there is no medical prohibition and the case otherwise, according to experience, is considered to be amenable and likely to gain benefit from a course of physical stimulation which Mr. Sandow endeavours to bring about, the case is accepted, and further particulars are taken. These further particulars include careful measurements of every part of the body and the weight, height, and lung capacity. The usual diet is also taken, copied from the patient's own verbal report, and if any physical peculiarity or structural defect is noticed the chart is drawn to indicate this. In this case there was a slight curvature of the spine. Then this report is placed before Mr. Sandow, and he arranges a certain set of exercises, specializing particularly on any weak part which may need stimulation. Every care is taken to avoid overstrain, and this is shown by the fact that very old men and quite small children take the exercises. There are no heavy weights to lift, and in the case of weakly or aged people the exercises are usually what are termed free movements without apparatus. This is the process usually adopted according to my experience of Mr. Sandow's treatment, and I have never to my knowledge heard that any person has suffered injury from the exercise.

Witness then handed in a medical report, showing that the deceased was organically sound, but that he was thin and run down, and out of condition. His measurements and the dilation of his stomach were also shown.

The Foreman: In the medical examination of the deceased did you find any trace of the cause of the condition of his stomach?—I did not see the deceased at the Institute. I was present at the *post-mortem* examination.

Mr. Lewis: In your opinion how long had the trouble which you discovered been present?—It is impossible to say, but it was there probably twelve months ago. The deceased undertook the course on April 6th last.

Charles Edward Trimble, Woodside, Pope's Grove, Twickenham, registered medical practitioner, said he was engaged at Sandow's Institute, and lived at Woodside, Twickenham. He stated: I examined the deceased when he first came to the nstitute on April 6th, 1910. He was in a weak condition and wasted. I sounded his lungs and heart, and found them sound organically. I examined his abdomen and found some dilatation of the stomach. I made the report which has been put in. I found no trace of the growth, and I consider the treatment which was prescribed was right. I considered him suitable for treatment. I noticed in the examination that deceased had a slight curvature of the spine.

The Foreman: What did he say he was suffering from?—He said he was suffering from dyspepsia, and had been for seven years past. The curvature of the spine had nothing to do with the death at all, and it was probably due to his weak condition.

By the Foreman: I did not discover the condition of the deceased's stomach. It was not an easy thing to discover, and he was rather young for it.

A Juryman: I should like to ask how often your pupils are examined by a medical man?—Witness: Once a month, as a rule, but the deceased was examined weekly.

Mr. Lewis: Was it possible that you could have ascertained what in fact the gentleman was suffering from by a medical examination such as any medical might have made?

Witness: It was possible, but very unlikely. In fact, I did not discover it. He had been for years under medical men, and he was also too young for it in the ordinary way.

The Foreman: We do not want further evidence. The deceased had been under treatment for seven years, and applied to Sandow's for treatment, and, in fact, had the treatment. The deceased was taken ill, and Dr. Wood, who was called in, found after *post-mortem* examination that death was due to natural causes.

The Coroner said it was not necessary for him to sum up at any length. The deceased had been under a doctor for some time, and then went in for the Sandow treatment. He was examined in the ordinary way, and it seemed they were very careful as to how they treated people. The treatment and instructions were very elaborate, and the last witness had told the jury he did not discover what was the matter with the deceased. He had answered Mr. Lewis that it was possible, but very unlikely, to discover what the deceased was suffering from. He returned home in bad health, was taken ill, and died. The doctor who was sent for, not knowing anything of the deceased, could not give a certificate as to the cause of death and had to make a *post-mortem* examination, from which he had ascertained the cause of death. If the jury thought the Sandow treatment was in any way to blame they would tell him. He proceeded to read the law on manslaughter by culpable neglect of duty or ignorance.

The Foreman (to the jury): Do you think Mr. Sandow's treatment accelerated death?

The Jury: No.

A Juryman: The deceased was in a weak state, and was not fit for exercise treatment.

The Foreman: I think the evidence of Mr. Sandow's witnesses shows they were very careful and the exercises very slight.

The jury returned the verdict of "Death from shock following on perforation of the stomach, from natural causes."

FEES FOR INQUEST AND NECROPSY.

491–7 writes that he was called to attend a servant who had suddenly been confined, but being out a colleague went in his place, who attended the patient at the time, but our correspondent subsequently went on with the case to recovery. As the patient had wittingly, or unwittingly, contributed to the death of the child, an inquest was necessitated and a *post-mortem* examination ordered. The order was issued to our correspondent, but required his colleague to assist him. When the inquest took place only his colleague was called in the first instance; he received two guineas. At the adjourned inquest our correspondent was called and was paid one guinea. On making representations to the coroner he was told that only one guinea could be allowed for a *post-mortem* examination, and that he must settle that matter with his colleague. He wishes to know if this is correct.

*** If our correspondent received an order from the coroner to make a *post-mortem* examination he is entitled to two guineas (Coroners Act, 1887, Sec. 22 (*b*), and could recover this fee from the coroner. There is nothing to prevent a coroner from directing two registered practitioners to make a *post-mortem* examination jointly, and in that case each would be entitled to the same fee, namely, two guineas, but in the details submitted it is not stated whether an order was issued to our correspondent's colleague, so that it would appear that the former only is at law entitled to the statutory fee, but if the coroner desired both to assist in making this examination, he ought in all fairness to have issued the usual order to both.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

OFFICIAL CHARGE.

ENQUIRER.—We do not think that a military medical officer who happens not to be in "official charge" of the wife or family of another officer is precluded from attending her or them if asked to do so, and it would be straining etiquette to insist that a lady in that position must consult only the medical officer under whose official charge she happens to be. But if the latter has been actually in attendance, his position would be exactly the same as that of a private medical practitioner, and he should receive the same recognition.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Praelectorship in Biochemistry.

F. G. HOPKINS, M.B., D.Sc.Lond., F.R.S., tutor and Fellow of Emmanuel College, has been appointed by Trinity College to a Praelectorship in Biochemistry. The appointment has been made "in the confident hope that the university will not relax its efforts to secure at the earliest opportunity the foundation of a professorship" in biochemistry, which the Senate has represented as an urgent need.

Degrees.

The following degrees have been conferred:

M.D.—A. W. D. Coventon, Trin.; A. N. Walker, Queens'.
M.B.—G. B. Fleming, King's; C. B. Heald, Caius.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on May 11th.

The Death of the King.

On the motion of the Vice-Chancellor, it was resolved—all the members standing—that a respectful address of condolence and congratulation be presented to King George V, and that the Vice-Chancellor should transmit to Her Majesty the Queen Mother an expression of the profound sorrow of the Senate on the death of His Majesty King Edward, and their respectful sympathy with Her Majesty in her grief.

Report of the Francis Galton Laboratory Committee.

The report on the work of the Francis Galton Eugenics Laboratory for 1909-10 was received from Professor Karl Pearson. Reference was made in the report to Miss Elderton's investigations into the influence on children of alcoholism in parents and of parental occupation, and to the researches in other branches of the subject conducted by Miss Barrington and Miss Ryley. Professor Pearson appealed for a more emphatic recognition by the university of the need for full provision for teaching and research in his department. Mr. Heron, Miss Elderton, and Miss Barrington were re-appointed for another year Galton Research Fellow, Scholar, and Computer respectively.

Dates for Submission of Theses.

It was resolved that the note in Section 4 of the Regulations under Statutes 113 and 129 (Red Book, September, 1909, p. 18) be amended to read as follows:

> NOTE.—The expression "two years" in this regulation will be interpreted in the case of students registered in October as the period from that month to the June in the second year following; in other cases it will be interpreted as two calendar years.

Appointments.

The following appointments were announced: Mr. A. Pearce Gould to be a member of the University College Committee for the remainder of the year beginning March 1st, 1910; Dr. E. G. Graham Little to be governor of the University College of North Wales, Bangor; Sir William H. Allchin to be governor of the Cranbrook Grammar School; Professor H. R. Kenwood to represent the university in respect of the University College at the congress of the Royal Institute of Public Health at Birkenhead in July, 1910.

Carpenter Medal.

In 1881 the university received from the Carpenter Testimonial Committee a sum of money in order that an annual prize should be instituted and associated with the name of Dr. William Benjamin Carpenter, registrar of the university from 1856 to 1879. The Senate has resolved to establish a Carpenter medal under the following regulations:

> 1. A Carpenter medal of the value of £20 (or its pecuniary equivalent, at the option of the successful student) will be awarded every three years by the Senate for a thesis of exceptional distinction in experimental psychology, including the physiology of the central nervous system and special senses, presented for a doctor's degree during the previous three years.
> 2. The Carpenter medal will be open both to internal and external students.
> 3. No award will be made unless in the opinion of the Senate a thesis of sufficient merit is presented.
> 4. The Carpenter medal will be awarded for the first time for a thesis for which a doctor's degree has been granted during the three years ending May 31st, 1913.

Alteration in Price of Calendar.

The price of the *Calendar*, which will now contain a complete alphabetical list of the living graduates of the university, with dates of degrees and indications as to whether each graduate took honours and is a member of Convocation, has been increased from 5s. to 6s.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., B.S.—W. R. W. Asplen, C. Banks, H. L. Barker, J. N. Beadles, *J. D. Benjafield (*a*), University College Hospital; L. C. Blackstone, E. S. Calthrop, A. Camacho, B. A. Cheadle, G. H. Chisnall, Ethel M. Connan, A. K. Contractor, Emily S. Cooke, Nina G. Cotton, G. M. Davies, D. F. Dobson, J. P. Elias, E. L. Elliott, S. F. Fouracre, H. Gardiner, *E. G. Gauntlett (*a, c, d, University Medal*), King's College Hospital; D. Green, H. Hingston, E. L. Horsburgh, S. Hoyte, A. E. Iles, Anne L. J. Kann, D. Kennedy, N. C. Lake, B.Sc., T. S. Lukis, G. Maxted, Marjorie E. Middleton, Ethel M. Morgan, H. O'Meara, Dossibai R. C. Patell, W. N. Pickles, W. L. Pink, A. B. Porteous, S. I. Rabbinowitz, N. L. M. Reader, E. E. A. T. Rigg, Mary C. Scott, E. G. Stanley, T. Stansfield, *T. D. M. Stout (*a*), Guy's Hospital; H. H. Tanner, H. L. Tasker, N. Tattersall, C. C. Tudge, W. R. M. Turtle, R. W. W. Vaughan, P. J. Veale, *F. M. R. Walshe, B.Sc. (*c*), University College Hospital; A. L. Weakley, W. Weir, R. H. Wilshaw, R. N. Woodsend.

B.S.—†H. Hartley, M.D., †Olive McDougall, M.D.

M.B., B.S. (*Group I only*)—Kathleen Bayliss, F. L. Brewer, H. A. Grierson, W. S. Kidd, M. A. Nicholson, J. V. Rees, C. Witts.

M.B., B.S. (*Group II only*).—T. K. Boney, E. G. H. Cowen, A. N. Cox, R. B. Edwards, T. C. C. Evans, T. W. George, Katherine A. Gill, E. H. Jones, E. R. Jones, A. E. Lees, K. D. Marriner, R. Montgomery, A. Renshaw, A. L. Robinson, H. G. Smith, H. Thwaite, S. van Someren Boyd, Elsie Warren.

* Honours. (*a*) Distinguished in Medicine. (*c*) Distinguished in Forensic Medicine. (*d*) Distinguished in Surgery.
† For Students who Graduated in Medicine in or before May, 1904.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held at the College on Thursday, May 26th, the President, Sir Thomas Barlow, in the Chair.

Death of King Edward VII.

Before the business of the day was commenced, the President addressed the Fellows, all standing, on the irreparable loss which the College, the nation, and the civilized world had sustained since their last meeting through the death of their Sovereign, King Edward VII. He dwelt more particularly on the late King's manifold sympathy with poverty and suffering, as evinced by his work on the Commission on the Housing of the Poor, the Cancer Research Fund, the Hospital Fund bearing his name, and numerous measures for the relief and benefit of his poorer subjects. The President concluded by saying that he felt sure that he would be only anticipating the wishes of the Fellows by moving the following resolutions:

> That this College humbly approach His Majesty King George, and express its profound sorrow at the loss which His Majesty and the Royal Family have sustained, and at the same time assure Him of the loyalty and devotion of the College to His Throne and Person.
>
> That the College humbly approach Her Majesty Queen Alexandra, and express its profound sorrow at the irreparable loss she has sustained.

Fellowship.

The gentlemen elected at the last meeting, with the exception of Dr. Rudolph, were admitted Fellows of the College.

The Registrar moved that the following temporary by-law be enacted for the first time, namely:

> That Robert Dawson Rudolph, M.D.Edin., elected to the Fellowship on April 28th, being resident in Canada, be admitted *in absentiâ*, any by-law to the contrary notwithstanding.

This was seconded and carried.

Membership.

Kekobad Cowasjii Anklesaria, L.R.C.P., was admitted a Member of the College.

Communication.

The following communication was received: From the Secretary of the College of Surgeons, dated May 17th, 1910, on the proceedings of the Council of that College on May 16th.

Emeritus Librarian.

The Senior Censor moved:

> That the title of Emeritus Librarian be conferred on Dr. Payne.

This was carried by acclamation.

Chelsea Physic Garden.

On the motion of the President, Sir Wm. Allchin was elected the representative of the College on the Committee of Management of the Chelsea Physic Garden.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence in Surgery.

THE Council has adopted new regulations for the granting its licence in surgery to registered practitioners. In future all candidates will have to attend the examinations ordinarily held by the Conjoint Board in Ireland so far as the surgery group of the subjects of the final examination for the Conjoint licence are concerned, and must be approved in all the divisions of this group on the same occasion. No more special examinations will be accorded in any circumstances. Besides fulfilling the usual requirements as to courses of study, candidates must also satisfy the Council that they have not within three months been rejected by any other licensing body in any of the subjects of the examination. The fee for examination has been fixed at 5 guineas, and is not returnable in any circumstances.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

DR. FORBES WINSLOW (London) writes in answer to "J. L. M.": Hypnotism in the case narrated would do considerable harm. The case is one of hallucination of hearing probably associated with delusion of persecution and suspicion so often seen in connexion with auricular insanity. "Consulting a solicitor" is often a concomitant symptom. I have a case precisely the same under my observation. It is in all probability a typical case of "paranoia" and one in which hypnotism should not be tried.

THE CLIMATE OF PERAK.

S.—As tropical climates go Perak and the Malay Peninsula generally may be looked upon as comparatively healthy. People can live there, for example, for years without coming home on leave, a state of affairs which seems to be impossible on the West Coast of Africa and other unhealthy parts of the tropics. The common diseases are malaria and dysentery, but with care they can largely be avoided now. If the financial terms are satisfactory the post might be worth accepting, but a course at one of the tropical schools should be taken previously to going abroad.

HAIR-WASHES CONTAINING LEAD.

HAIR-WASH.—In the circumstances mentioned by "Hair-Wash" it is very possible that the symptoms complained of were due to lead. Lead lotion applied in the manner stated—that is, "vigorously (? daily) with a sponge over the scalp, beard, and moustache," is not a proper way of applying such a solution. There is formation of lead sulphide, and, in such a case, in excess. There would, therefore, be a risk of getting some of the lead sulphide when dry through the mouth, and to some extent, perhaps, through the skin. The patient evidently used the lotion regardless of expense (daily). After use excess should be removed with warm water and frequent applications avoided. When employed in this way with care the risk of lead poisoning is remote. "Hair-Wash" does not say whether there was any sign of a lead line on gums. As to the particular hair lotion (proprietary article) named by our correspondent, there is little doubt that it contains some metallic salt or other (assuming the particular proprietary article in question was sold to dye the hair). That is the rule with hair dyes on the market, notwithstanding any advertised assertion to the contrary. Many advertised dyes said to contain nothing but vegetable substances are not to be relied upon. *Caveat emptor!* In Germany and Austria hair dyes containing poisonous metallic salts are not (ostensibly?) allowed to be sold on the ground that they contain toxic substances. But that such dyes are sold goes without saying, however zealous and lynx-eyed officials may be. Fraud and quackery are rampant everywhere. One writer has well said that the mainstay of the newspaper is the "pale person."

LETTERS, NOTES, ETC.

THE BRIGHTON THROAT HOSPITAL.

MR. C. H. GOLDING-BIRD writes: In my notice of the late Mr. Cresswell Baber in your last issue, I spoke of him as founder of the Throat and Ear Hospital at Brighton. I now learn he was joint founder with the late Dr. Scatliff, a fact of which I was not aware when I wrote. I hasten to make the correction.

"TIGHT NECK-CLOTHING."

DR. W. G. WALFORD, of Finchley Road, N.W., to whose views on the important part played by tight neck-clothing in the production of disordered health we have before called attention, has been good enough to supply some further details respecting one of his cases. The patient is a widow lady, aged about 50, who tries to eke out her resources by running a lodging-house single handed. She has been very much out of health for some six months, salient features being very marked enlargement of one knee from rheumatic gout and neuralgia at the back of the neck and shoulders. She was receiving no treatment, as her former medical adviser and herself agreed as to its inability so long as her environment and mode of life was so unfavourable. Seen at Easter by Dr. Walford, she was noted to be wearing tight neck-clothing, and was told that if she relaxed it and continued to do so gradually, she would find a decided change in a fortnight and be pretty well in three weeks or a month. The prognosis was verified; in a fortnight she reported herself as improving, and at the end of five weeks as being quite her old self, despite no alteration in her mode of life, surroundings, or other circumstances other than attention to the neck clothing. Dr. Walford also puts forward grounds for believing that persons of so-called gouty habit to whom an incautious meal commonly provokes great discomfort, may dine "well but not wisely," and yet escape scot free provided they have adopted the loose-neck clothing principle. An account of Dr. Walford's views will be found at pages 1100 and 1336, vol. i, 1909, and a review of his booklet on page 699, vol. i, 1910. He retired from practice some years ago, and is anxious that those who have greater opportunities should turn their attention to the same disorder.

CHRISTIAN SCIENCE AND THE REDUCTION OF DISEASE.

MR. FREDERICK DIXON writes: In an article entitled the "Decrease of Medical Students in America" you go cut of your way, after the manner which is becoming almost inevitable in the press to-day, to attack Christian Science, and, if you will forgive my saying so, you lose sight of your logic in the effort. You put down the decline in the number of medical students to some various causes, amongst others to Christian Science, and then conclude with the deduction that the decline may be taken as a proof of the success with which the medical profession is fulfilling its aim. Now, as a mere matter of argument, if the decline is owing to the success of the medical profession, how can it possibly be owing to the competition of Christian Scientists? Furthermore, why, because you differ entirely from the methods of Christian Science, should it be necessary to speak of Christian Scientists as the personification of childish credulity, encouraging people to go to the devil? The best way to meet childish credulity is to ignore it, and when people are sure that their neighbours are childishly credulous they find it easy enough to ignore their claims. The persistent attacks which are made on Christian Scientists all over the world, and which seem to grow in intensity rather than anything else, are possibly the strongest proof that their opponents are perfectly conscious that Christian Science is not childish credulity, but is a great movement to be reckoned with.

*** We may point out to Mr. Dixon that "Christian Science" was only incidentally mentioned among other forms of wonder working. The attribution to the American people of credulity in matters relating to health had no special reference to Christian Science. We do not attach the same importance to this "great movement" that Mr. Dixon does, nor did we refer to it as encouraging people to go to the devil; we do not meddle with theology. Does Mr. Dixon deny that various diseases have been stamped out, and the prevalence of others greatly reduced by the self-sacrificing labours of the medical profession? Does he contend that anything of the kind has been achieved by Christian Science? If so, will he do what we have several times asked for in vain—give a few properly authenticated facts to support his contention? The awakening of slumbering will power in some neurotic people is nothing to the purpose, for the same thing has been, and is done, by the stimulating action of faith whether in some form of religion or in particular persons believed to be endowed with the power of healing. Has Christian Science reduced the mortality from any organic disease, or had any effect at all on public health that can be proved by evidence that will bear examination? We repeat what we want is Facts. If these are brought forward we are quite willing to examine them dispassionately, for our only object is to get at the truth. But so far we have got nothing but assertions—"a tale of little meaning, though the words are strong."

CORRECTIONS.

IN a review of a work entitled *The Prevention and Treatment of Abortion*, which was published in the BRITISH MEDICAL JOURNAL of May 28th, p. 1296, the name of the author should be "Taussig," not "Janssig" as printed throughout the article. The name of the publishers was also incorrectly given—it should have been "George Keener and Co.," not "George Keenen and Co."

IN the article on "Distribution of Diseases in Persia," which appeared in the JOURNAL of May 21st, p. 1247, Dr. M. M. Basil is referred to as "of Taurni, Constantinople." This is an error, "Taurni" being a misprint for "Taxim."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.